Issue 186
PS
1968 Series
THE PREVENTIVE MAINTENANCE MONTHLY
CLANK
GRIND
WHO'S SHOOTIN' AT US, GEORGE?
NO ONE!! ...IT'S F.O.D.
Will Eisner

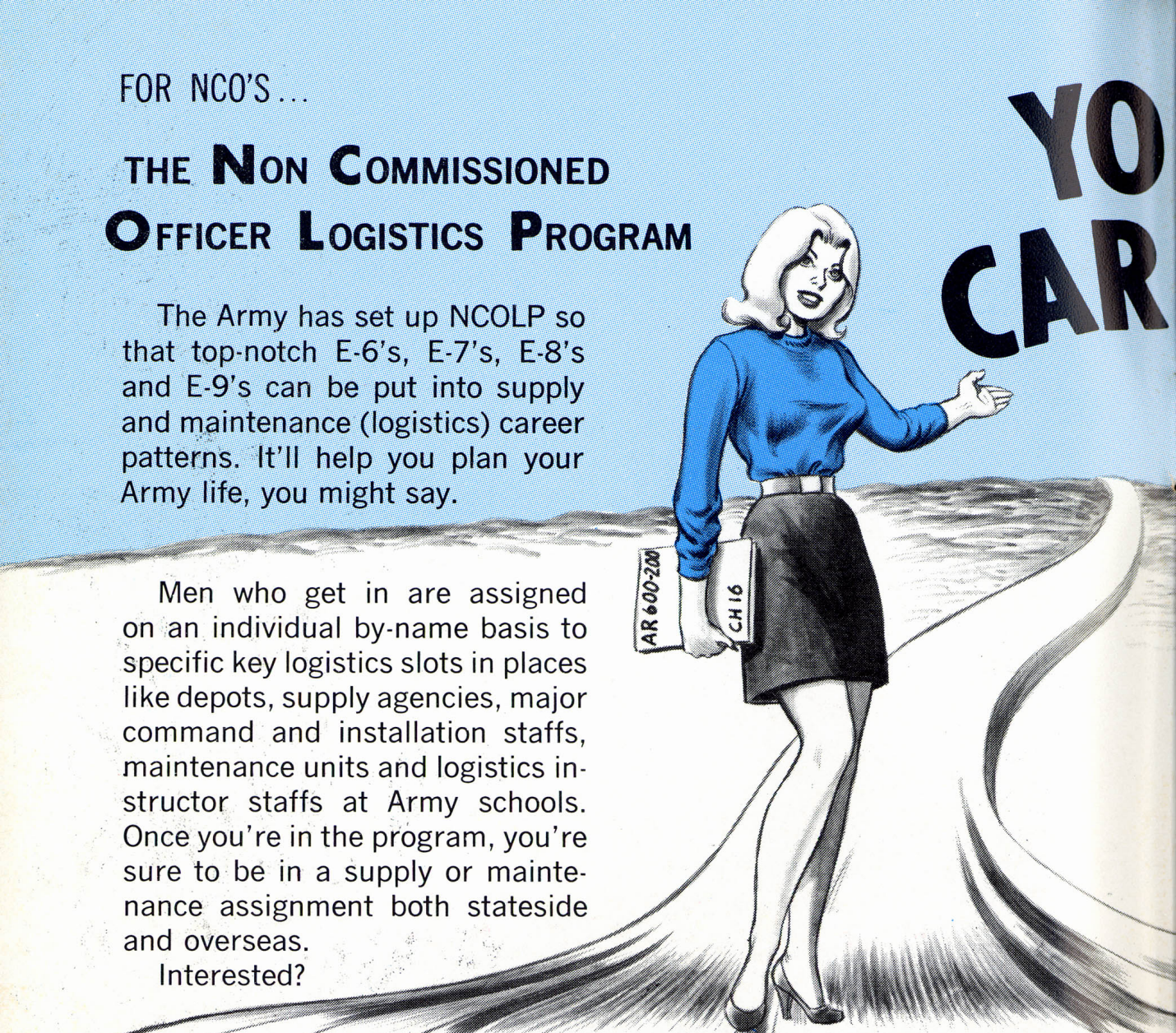
FOR NCO'S...

THE NON COMMISSIONED OFFICER LOGISTICS PROGRAM

The Army has set up NCOLP so that top-notch E-6's, E-7's, E-8's and E-9's can be put into supply and maintenance (logistics) career patterns. It'll help you plan your Army life, you might say.

Men who get in are assigned on an individual by-name basis to specific key logistics slots in places like depots, supply agencies, major command and installation staffs, maintenance units and logistics instructor staffs at Army schools. Once you're in the program, you're sure to be in a supply or maintenance assignment both stateside and overseas.

Interested?



NCO

A PLANNED CAREER

FOR YOU

SPECIAL PIN-POINT ASSIGNMENT — SURE DUTY IN YOUR FIELD —

Then dig out Change 16 (28 Aug 67) to AR 600-200 and follow the scoop in Paras 4-28 thru 4-37. You can apply, or your CO can nominate you if he thinks you've got what it takes.

FOR NCO'S...

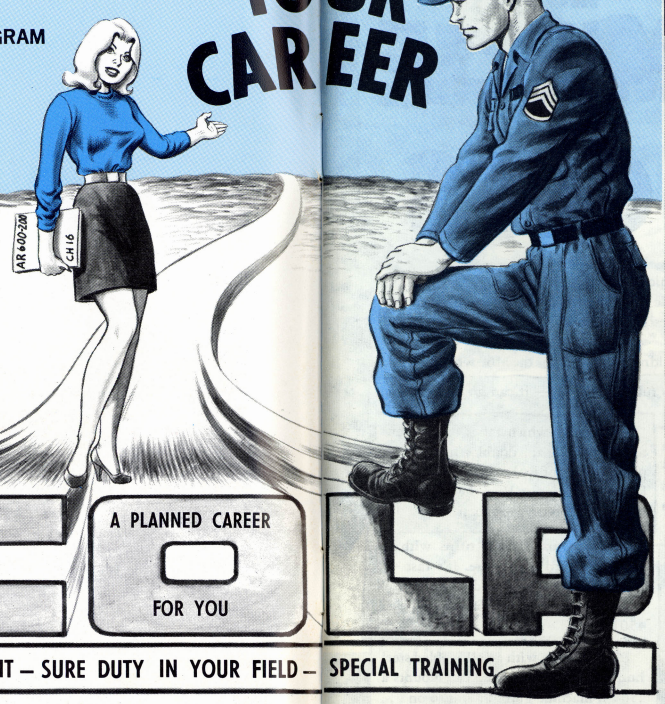
THE NON COMMISSIONED OFFICER LOGISTICS PROGRAM

The Army has set up NCOLP so that top-notch E-6's, E-7's, E-8's and E-9's can be put into supply and maintenance (logistics) career patterns. It'll help you plan your Army life, you might say.

Men who get in are assigned on an individual by-name basis to specific key logistics slots in places like depots, supply agencies, major command and installation staffs, maintenance units and logistics instructor staffs at Army schools. Once you're in the program, you're sure to be in a supply or maintenance assignment both stateside and overseas.

Interested?

YOUR CAREER



NCOLP

A PLANNED CAREER FOR YOU

SPECIAL PIN-POINT ASSIGNMENT – SURE DUTY IN YOUR FIELD – SPECIAL TRAINING

Then dig out Change 16 (28 Aug 67) to AR 600-200 and follow the scoop in Paras 4-28 thru 4-37. You can apply, or your CO can nominate you if he thinks you've got what it takes.

A lot of real live-wire supply and maintenance NCO's are already in NCOLP.

PS

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 186 1968 Series

IN THIS ISSUE

GROUND MOBILITY 2-23

M578 2-17
Truck Tool Kits 18-19
12-Ton Trailers 20, 21
Repair Tool Kit 20
Q Service Tip 21
U-Bolts 22
M113A1 22
M113 Gun Mount 23
M113 Ramp 23

FIREPOWER 24-27, 50-53

M48A3 24
M60 25
M60A1 26
M36 Periscope 26
M110 Howitzer 27
M102 Howitzer 27
Hawk Notes 50-53

AIR MOBILITY 37-43

OH-23 37, 38-39
Inspection TB 37
U-8 40
DA Form 2410 42-43
O-1 41
U-6 41
OH-6A 41

COMMUNICATIONS 44-49

AN/TRC-80* 44-45
SB-22/PT 45
AN/PRT-4 46
AM-598/U 46
AN/VRC-12 47
TT-76 48
Starlight Scope 49
AN/PPS-4 49

GENERAL AND SUPPLY

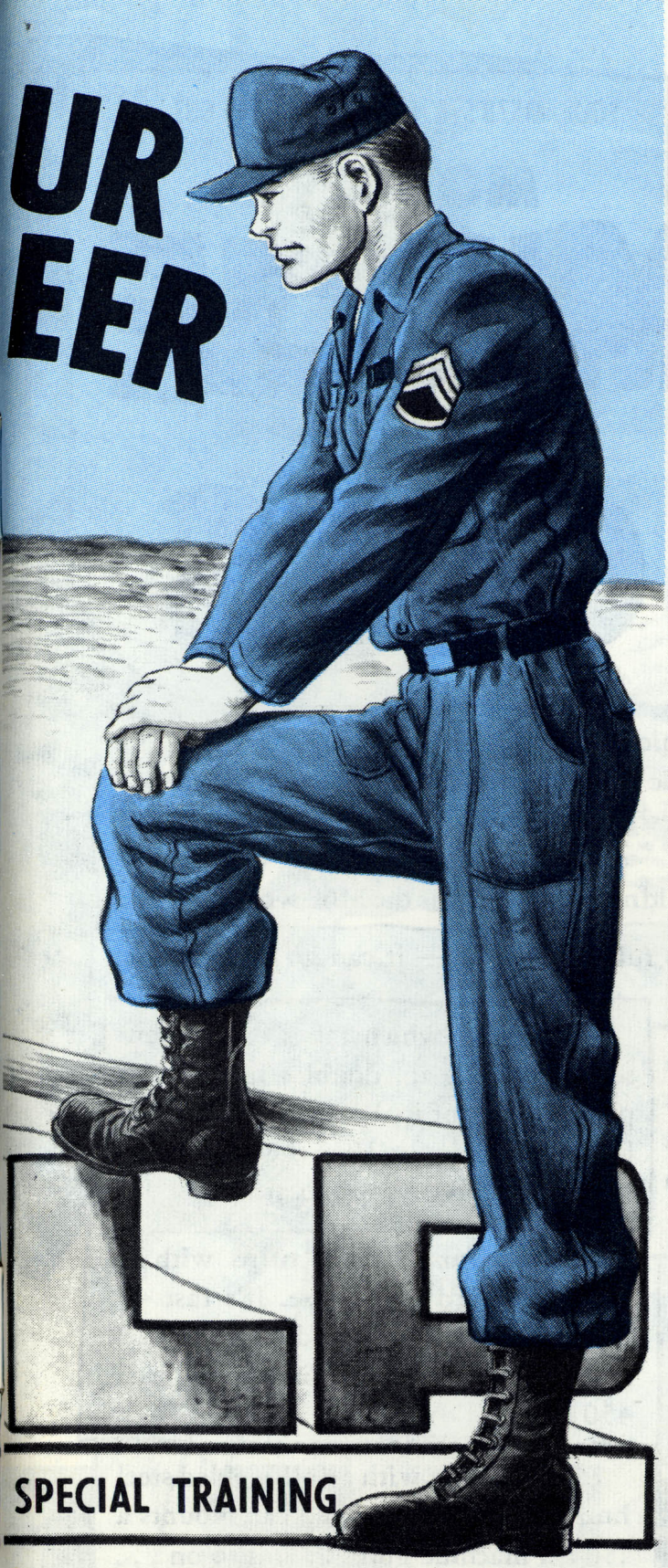
Maintenance Tent 54-55
Generators 56
290M Tractor 56
Model 2380 Crane 57
Chain-Saw Teeth 57
Supply 5, 6, 11, 13, 18, 19, 20, 27, 42, 44, 50, 52 and 53.
D7E Tractor 57
Repair Parts Manuals 58-61
DA Form 2408-14 62-63
Commercial Manuals 64
New Publications 28

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 26 February 1968.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast, PS Magazine, Fort Knox, Ky. 40121



SPECIAL TRAINING

A lot of real live-wire supply and maintenance NCO's are already in NCOLP.

PS

Published by the Department of the Army for the Information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE **PREVENTIVE MAINTENANCE** MONTHLY

Issue No. 186 1968 Series

IN THIS ISSUE

GROUND MOBILITY 2-23

M578 2-17
Truck Tool Kits 18-19
12-Ton Trailers 20, 21
Repair Tool Kit 20
Q Service Tip 21
U-Bolts 22
M113A1 22
M113 Gun Mount 23
M113 Ramp 23

FIREPOWER 24-27, 50-53

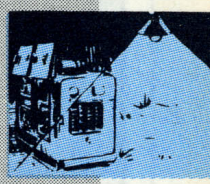
M48A3 24
M60 25
M60A1 26
M36 Periscope 26
M110 Howitzer 27
M102 Howitzer 27
Hawk Notes 50-53

AIR MOBILITY 37-43

OH-23 37, 38-39
Inspection TB 37
U-8 40
O-1 41
U-6 41
OH-6A 41
DA Form 2410 42-43

COMMUNICATIONS 44-49

AN/TRC-80 44-45
SB-22/PT 45
AN/PRT-4 46
AM-598/U 46
AN/VRC-12 47
TT-76 48
Starlight Scope 49
AN/PPS-4 49



GENERAL AND SUPPLY

Maintenance Tent 54-55
Generators 56
290M Tractor 56
Model 2380 Crane 57
Chain-Saw Teeth 57
Supply 5, 6, 11, 13, 18, 19, 20, 27, 42, 44, 50, 52 and 53.
D7E Tractor 57
Repair Parts Manuals 58-61
DA Form 2408-14 62-63
Commercial Manuals 64
New Publications 28

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 26 February 1968.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121

YOUR M578'S A BANTAMWEIGHT, BUT . . .

MOSTLY MUSCLE AND GUTS

If you have an M578 recovery vehicle you've got a lot going for you. It's a combined wrecker and recovery vehicle that can tow almost anything, tracked or wheeled, however it was primarily designed to tow the tracked vehicle M107-M110 series.

Its armor lets you go places that wouldn't be healthy for the M62 wrecker truck.

Light — only about 54,000 pounds fully equipped — it can go over bridges that wouldn't hold an M88 VTR.

In fact, you can take it any place you can go with the M107-M110 SP artillery family, which figures because it has the same diesel engine, transmission and basic chassis.

The spade, which takes only a few seconds to dig in, doubles its holding power. Eight of its 10 road wheels have lockout cylinders to keep the suspension rigid during recovery operations.

Its fixed length 16-ft boom can traverse 360 degrees and pick up the heaviest tank power pack, and it has a separate tow winch with 230 feet of inch-diameter cable for recovery work.

You can make pivot turns with it either forward or reverse. It's fast — top speed 37 MPH — and it carries 320 gallons of fuel for a maximum range of 450 miles.

It's low slung with an all-welded steel hull and its armor-plated cab mounts a .50-cal machine gun . . . and so on . . . and so on.

YOUR M578'S A BANTAMWEIGHT, BUT . . .

MOSTLY MUSCLE AND GUTS

If you have an M578 recovery vehicle you've got a lot going for you. It's a combined wrecker and recovery vehicle that can tow almost anything, tracked or wheeled, however it was primarily designed to tow the tracked vehicle M107-M110 series.

Its armor lets you go places that wouldn't be healthy for the M62 wrecker truck.

Light — only about 54,000 pounds fully equipped — it can go over bridges that wouldn't hold an M88 VTR.

In fact, you can take it any place you can go with the M107-M110 SP artillery family, which figures because it has the same diesel engine, transmission and basic chassis.

The spade, which takes only a few seconds to dig in, doubles its holding power. Eight of its 10 road wheels have lockout cylinders to keep the suspension rigid during recovery operations.

Its fixed length 16-ft boom can traverse 360 degrees and pick up the heaviest tank power pack, and it has a separate tow winch with 230 feet of inch-diameter cable for recovery work.

You can make pivot turns with it either forward or reverse. It's fast — top speed 37 MPH — and it carries 320 gallons of fuel for a maximum range of 450 miles.

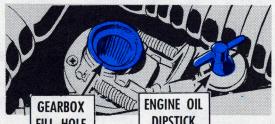
It's low slung with an all-welded steel hull and its armor-plated cab mounts a .50-cal machine gun . . . and so on . . . and so on.

OKAY-- GREAT! BUT YOU DON'T GET ALL THESE ADVANTAGES FOR NOTHING... LET'S CHECK OUT A FEW PLACES WHERE YOU COULD HAVE TROUBLE?

FRONT OF VEHICLE

ENGINE OIL LEVEL — After your M578 stands overnight the oil level may read about 3/8 inch over the FULL mark. This is normal.

If a dipstick check shows you need engine oil, add engine oil through the filler tube in the engine rocker arm cover, not in the gearbox fill hole. It's easy to go wrong on this. Also, the gearbox dipstick is often overlooked because it's under the filter screen.



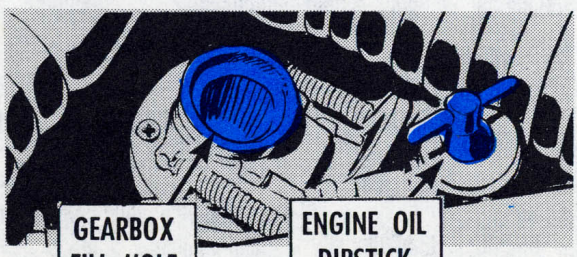
MORE

OKAY-- GREAT! BUT YOU DON'T GET ALL THESE ADVANTAGES FOR NOTHING... LET'S CHECK OUT A FEW PLACES WHERE YOU COULD HAVE TROUBLE?

FRONT OF VEHICLE

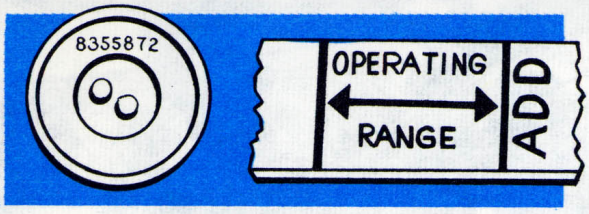
ENGINE OIL LEVEL — After your M578 stands overnight the oil level may read about 3/8 inch over the FULL mark. This is normal.

If a dipstick check shows you need engine oil, add engine oil through the filler tube in the engine rocker arm cover, not in the gearbox fill hole. It's easy to go wrong on this. Also, the gearbox dipstick is often overlooked because it's under the filter screen.



P.S MORE

TRANSMISSION OIL LEVEL—If your XTG 411-2A transmission has had MWO 9-



2520-234-30/1 applied, (to modify the oil level gage) or if its serial number is 1457 or over, you check the oil level like so . . .

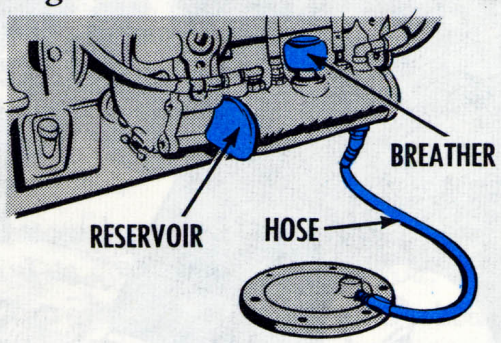
1. Before starting the engine, make sure the transmission oil level is within the operating range stamped on the gage tape.
2. Add or drain oil if needed to get it within operating range.

   Always make allowances for the temperature. F'instance, if oil is cold it may take as much as 8 hours to drain back to the reservoir as against only 3 minutes for oil at 200°F.

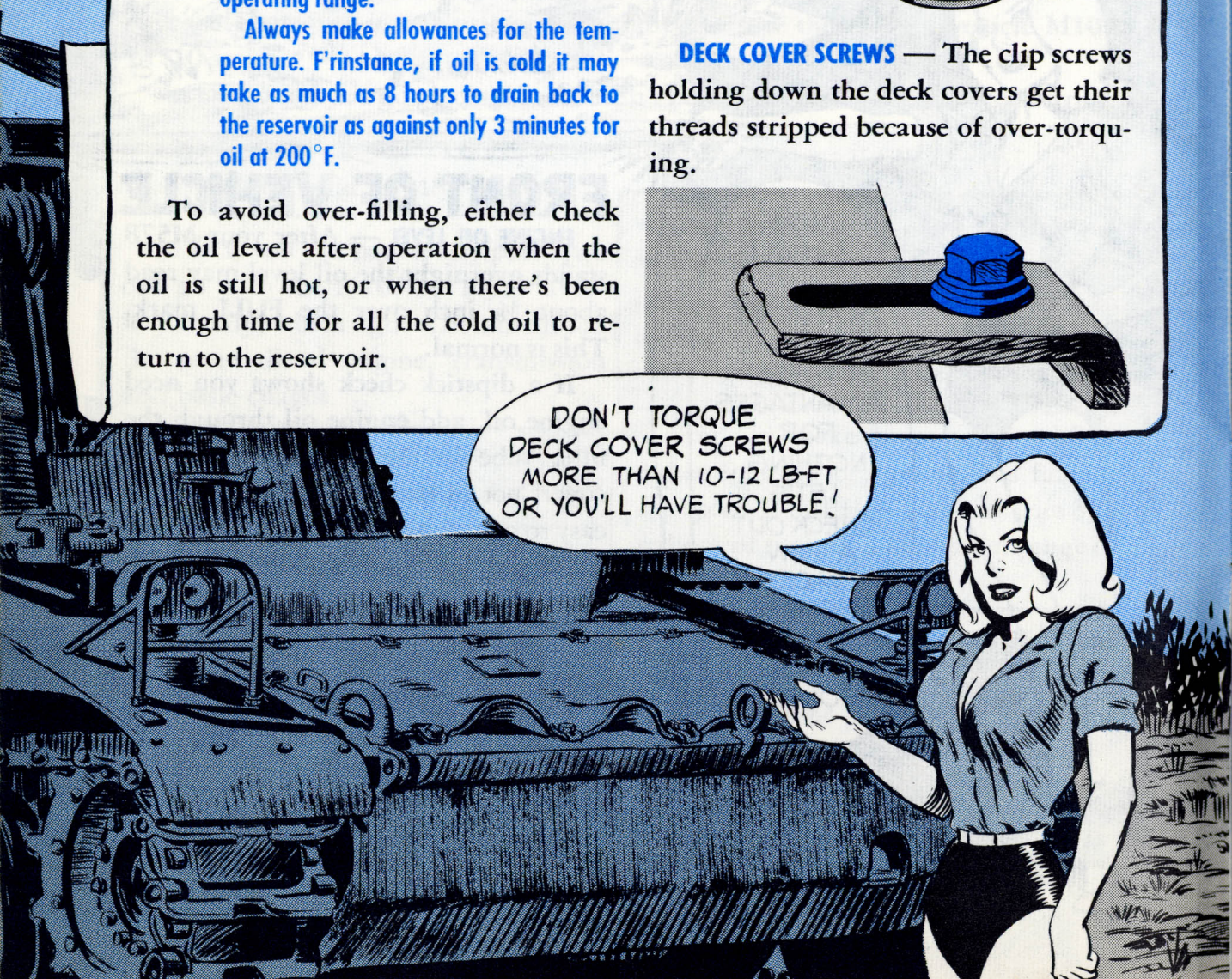
To avoid over-filling, either check the oil level after operation when the oil is still hot, or when there's been enough time for all the cold oil to return to the reservoir.

ENGINE RESERVOIR — The engine reservoir, breather and drain can get clogged with dirt. When this happens the transmission may become pressurized and too much pressure can blow the filler cap off the transmission.

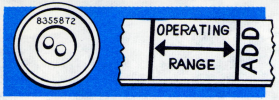
When you check over the vehicle, drain the reservoir and clean out the breather. If necessary, also clean the reservoir drain hose by blowing air through it.



DECK COVER SCREWS — The clip screws holding down the deck covers get their threads stripped because of over-torquing.



TRANSMISSION OIL LEVEL—If your XTG 411-2A transmission has had MWO 9-



2520-234-30/1 applied, (to modify the oil level gage) or if its serial number is 1457 or over, you check the oil level like so . . .

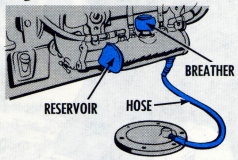
1. Before starting the engine, make sure the transmission oil level is within the operating range stamped on the gage tape.
2. Add or drain oil if needed to get it within operating range.

   Always make allowances for the temperature. F'instance, if oil is cold it may take as much as 8 hours to drain back to the reservoir as against only 3 minutes for oil at 200°F.

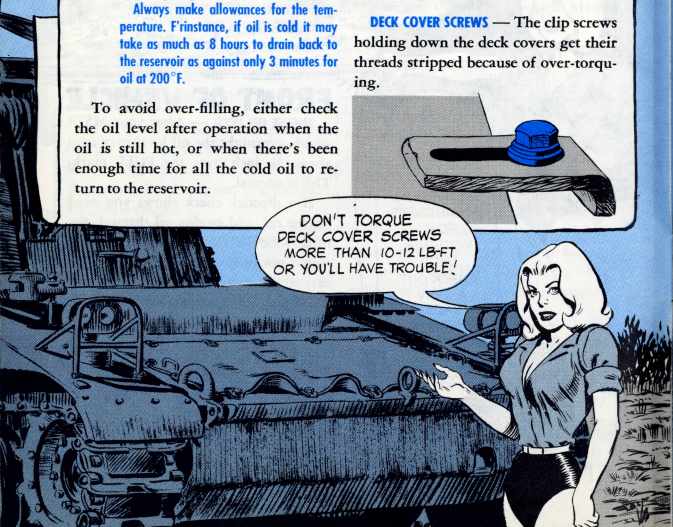
To avoid over-filling, either check the oil level after operation when the oil is still hot, or when there's been enough time for all the cold oil to return to the reservoir.

ENGINE RESERVOIR — The engine reservoir, breather and drain can get clogged with dirt. When this happens the transmission may become pressurized and too much pressure can blow the filler cap off the transmission.

When you check over the vehicle, drain the reservoir and clean out the breather. If necessary, also clean the reservoir drain hose by blowing air through it.

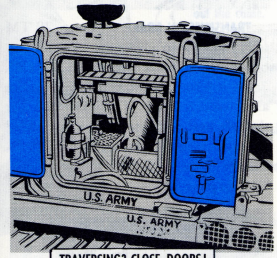


DECK COVER SCREWS — The clip screws holding down the deck covers get their threads stripped because of over-torquing.

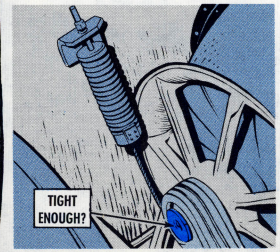


CAUTION

REAR DOORS — The rear cab doors must be kept closed when you traverse the cab. Otherwise they'll hit the towbar mountings in the front and maybe hurt somebody.

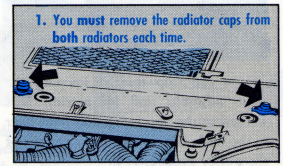


COOLING FAN PULLEY—If your M578 was made by Bowen-McLaughlin-York and has a serial number of 475 or higher, the cooling fan pulley-retaining nut may not be on tight enough. You should have the retaining nut torqued to 550-575 lb-ft.



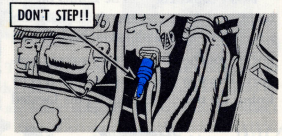
RADIATOR FILLING — Filling the 2 radiators is a little tricky. Unless you do it right, air gets trapped in the system and you can't fill the radiators completely. The engine will then overheat.

Here's what to do:



1. You must remove the radiator caps from both radiators each time.
2. Add coolant to both radiators, and fill to top. Do not leave any space. If you suspect a cap is not doing its job, get a new one.
3. Order it as FSN 2930-690-2701. It's in Ch 1 to your —20P TM.
4. If you think air is trapped in the cooling system, take off the radiator caps again and remove the vent plug from the thermostat housing. When coolant flows from the vent hole, put the vent plug back. Now refill both radiators and replace the caps.

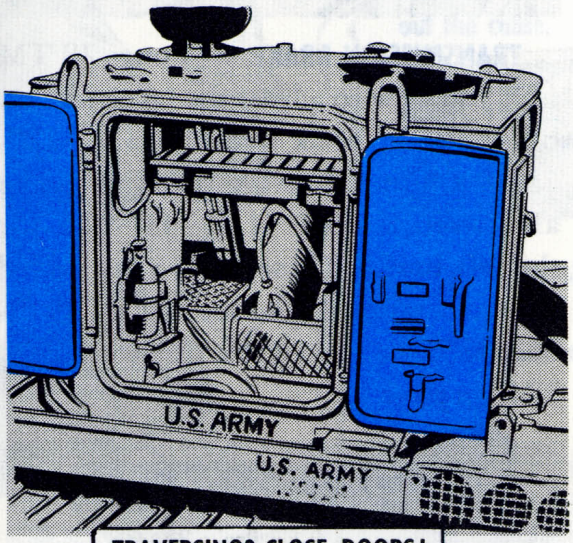
KEEP OFF — Connections to winterization fuel-pump solenoid have been getting broken. Only reason for this is people have been stepping on 'em.



MORE

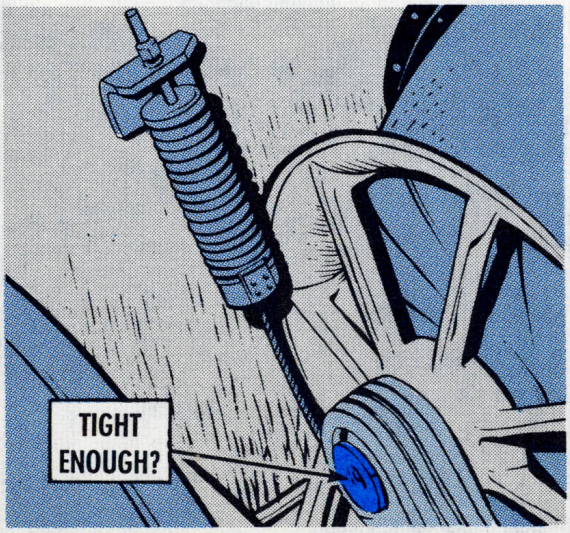
CAUTION

REAR DOORS — The rear cab doors must be kept closed when you traverse the cab. Otherwise they'll hit the tow-bar mountings in the front and maybe hurt somebody.



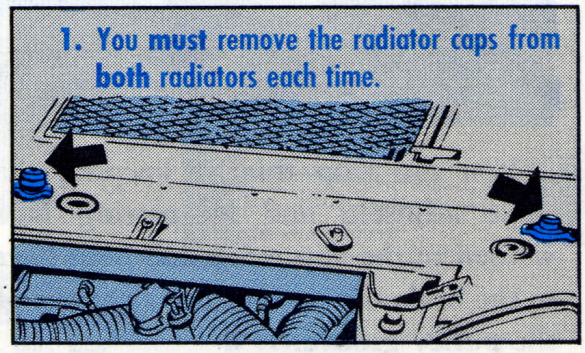
TRAVERSING? CLOSE DOORS!

COOLING FAN PULLEY — If your M578 was made by Bowen-McLaughlin-York and has a serial number of 475 or higher, the cooling fan pulley-retaining nut may not be on tight enough. You should have the retaining nut torqued to 550-575 lb-ft.

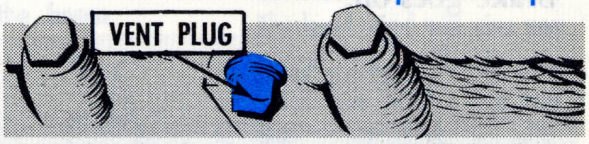


RADIATOR FILLING — Filling the 2 radiators is a little tricky. Unless you do it right, air gets trapped in the system and you can't fill the radiators completely. The engine will then overheat.

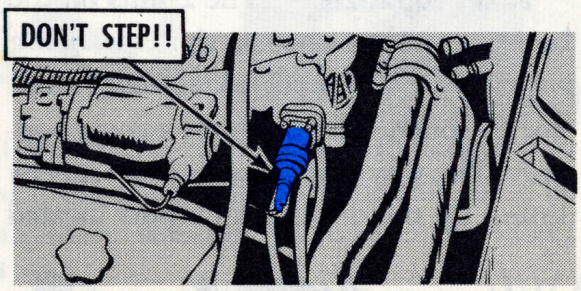
Here's what to do:



2. Add coolant to both radiators, and fill to top. **Do not leave any space.** If you suspect a cap is not doing its job, get a new one.
3. Order it as FSN 2930-690-2701. It's in Ch 1 to your —20P TM.
4. If you think air is trapped in the cooling system, take off the radiator caps again and remove the vent plug from the thermostat housing. When coolant flows from the vent hole, put the vent plug back. Now refill both radiators and replace the caps.

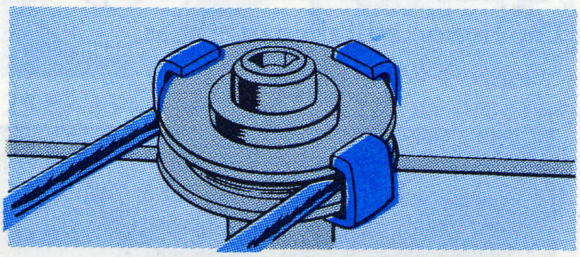


KEEP OFF — Connections to winterization fuel-pump solenoid have been getting broken. Only reason for this is people have been stepping on 'em.



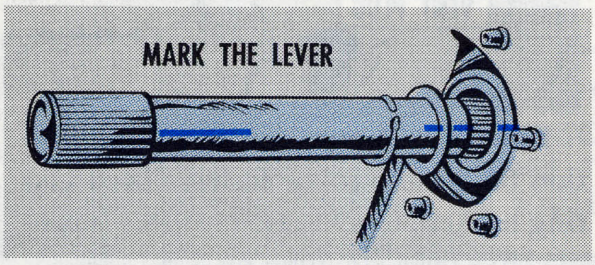
P.S. MORE

BRAKE-LEVER CABLE — The brake-lever cable can slip out of the groove of the equalizing pulley if the cable is too loose or not adjusted right and one of the cable retaining clips is bent.

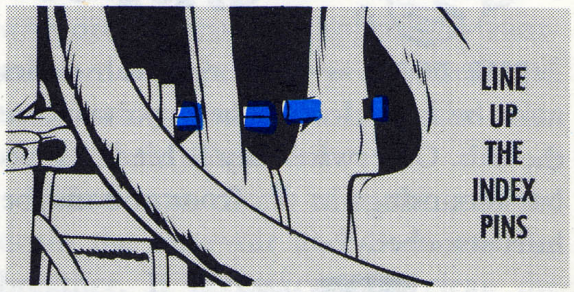


You can stop this by keeping the cable adjusted and by getting tabs welded to the clip tangs and bent over so the brake-lever cable can't get out of the pulley groove.

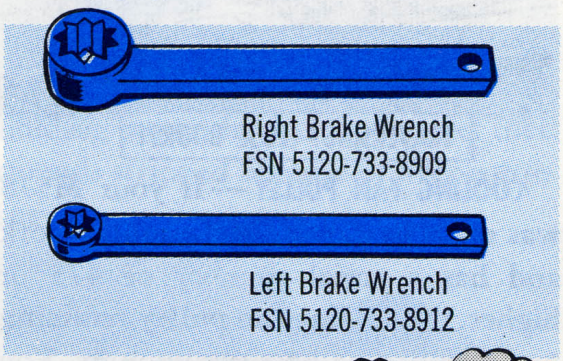
BRAKE LEVER — When you disconnect the brake lever you'll find there's no master spline or V groove to help get it back on in the same position. Mark the lever so you can line it up right. Otherwise, if you get it on too high, the brake will drag because it'll always be partly on. If you get it too low, there'll be too much brake pedal travel before the brake goes on.

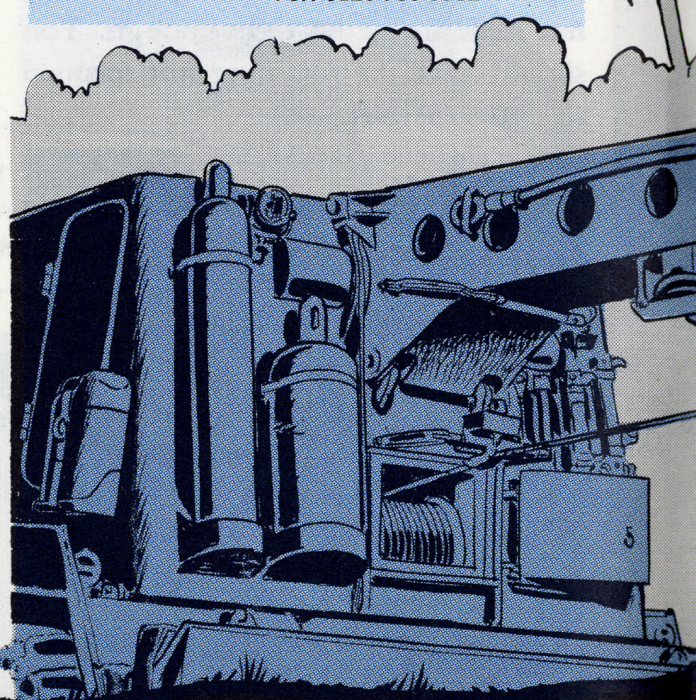


BRAKE EQUALIZER — The 2 nuts on the brake equalizer change the equalizing adjustment on both brakes, and should not be touched by anybody except support. The way you should adjust it is by lining up the dowel index pins located on the brake apply levers under the 2 transmission end covers.

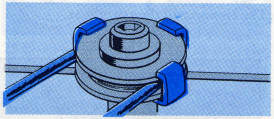


TRANSMISSION BRAKE — Your -20 TM tells you how to adjust the transmission brakes. You need wrench FSN 5120-733-8909 for adjusting the right brake and wrench FSN 5120-733-8912 for the left brake. These tools were added to organizational tool set A, FSN 4910-062-9475 by Ch 1 (Dec 66) to the -20 TM, on page 3.



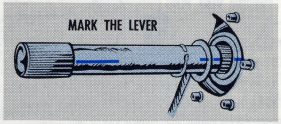


BRAKE-LEVER CABLE — The brake-lever cable can slip out of the groove of the equalizing pulley if the cable is too loose or not adjusted right and one of the cable retaining clips is bent.



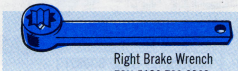
You can stop this by keeping the cable adjusted and by getting tabs welded to the clip tangs and bent over so the brake-lever cable can't get out of the pulley groove.

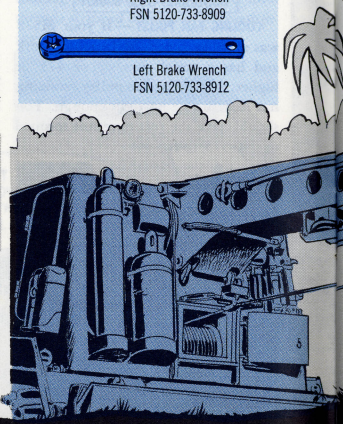
BRAKE LEVER — When you disconnect the brake lever you'll find there's no master spline or V groove to help get it back on in the same position. Mark the lever so you can line it up right. Otherwise, if you get it on too high, the brake will drag because it'll always be partly on. If you get it too low, there'll be too much brake pedal travel before the brake goes on.

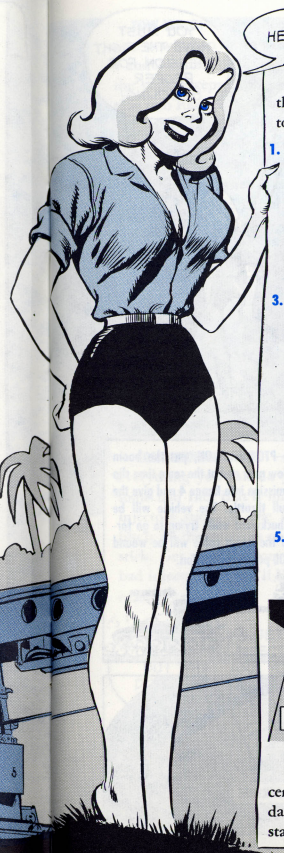


BRAKE EQUALIZER — The 2 nuts on the brake equalizer change the equalizing adjustment on both brakes, and should not be touched by anybody except support. The way you should adjust it is by lining up the dowel index pins located on the brake apply levers under the 2 transmission end covers.

TRANSMISSION BRAKE — Your -20 TM tells you how to adjust the transmission brakes. You need wrench FSN 5120-733-8909 for adjusting the right brake and wrench FSN 5120-733-8912 for the left brake. These tools were added to organizational tool set A, FSN 4910-062-9475 by Ch 1 (Dec 66) to the -20 TM, on page 3.





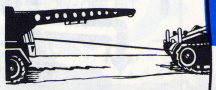


HERE'S HOW THE **LEVEL WIND** WORKS.

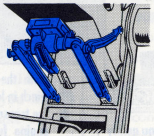
The level wind traverses the cab automatically so the tow winch cable is always at the right angle for towing or winding up.

1. Make sure the level wind switch is off and then spool out the cable.

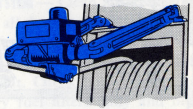
2. Attach the cable end to the vehicle you want to winch and spool in a little bit first to tighten the cable.



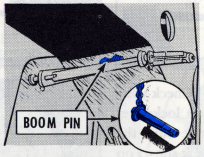
3. Take out the slide pin and its sleeve and unhook the bar pin and both side bar pins.



4. Put the level wind on the cable and put the pin and sleeve back.



5. Secure the bracket under the boom with the boom pin.



6. Turn the level wind switch ON and wind in the cable. The level wind will give you a tight and even wrap, provided you have some tension on the cable. (See page 9 of Ch 2 to your —10 TM.)

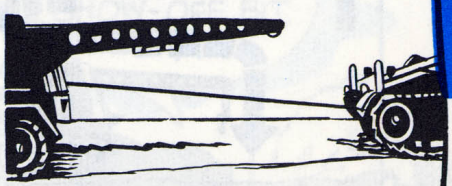
Safety Note: The vehicle cab moves automatically to center itself on the cable during the pull and this could be dangerous for anybody standing alongside. So don't stand there.

MORE

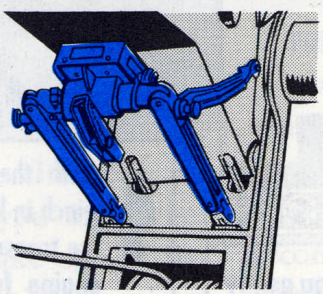
The level wind traverses the cab automatically so the tow winch cable is always at the right angle for towing or winding up.

1. Make sure the level wind switch is off and then spool out the cable.

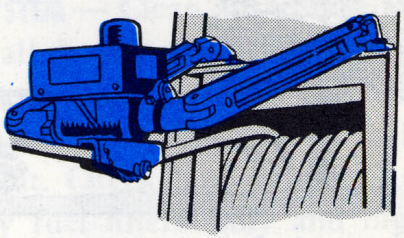
2. Attach the cable end to the vehicle you want to winch and spool in a little bit first to tighten the cable.



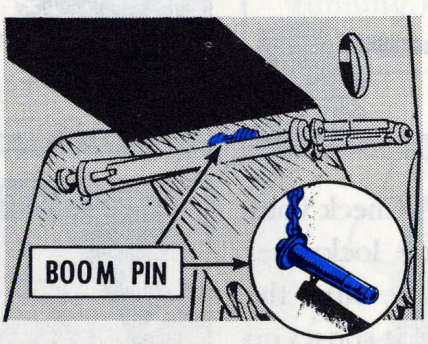
3. Take out the slide pin and its sleeve and unhook the bar pin and both side bar pins.



4. Put the level wind on the cable and put the pin and sleeve back.



5. Secure the bracket under the boom with the boom pin.

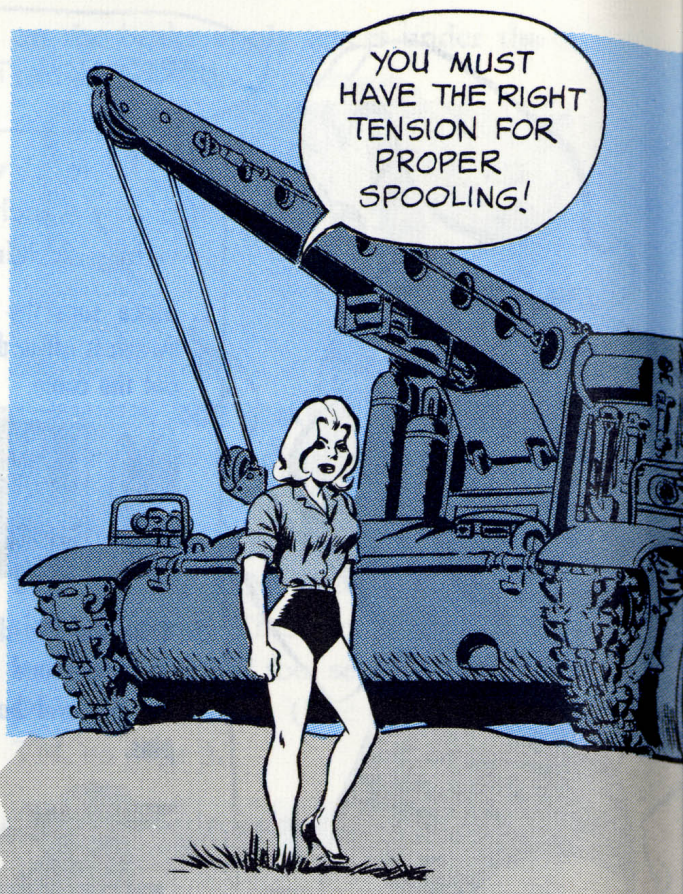


6. Turn the level wind switch ON and wind in the cable. The level wind will give you a tight and even wrap, provided you have some tension on the cable. (See page 9 of Ch 2 to your —10 TM.)

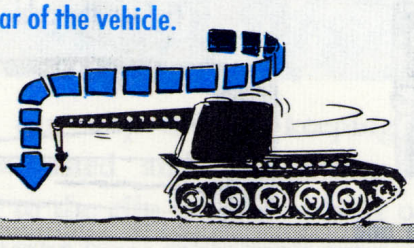
Safety Note: The vehicle cab moves automatically to center itself on the cable during the pull and this could be dangerous for anybody standing alongside. So don't stand there.

P.S. MORE

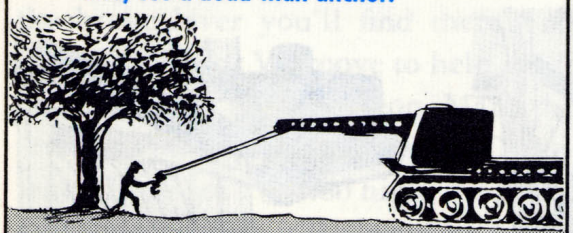
SPOOLING BOOM WINCH — If the boom-winch cable is not wound properly on the drum it can get damaged when you use it for heavy pulling. You need a cable tension of 7,500 pounds to wrap the cable on the drum the way it should go. To get this tension you:



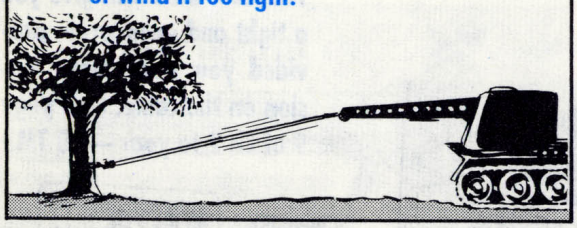
1 Rotate the cab and lower the boom at the rear of the vehicle.



2 Pay out the cable and connect the end to a big tree or other stationary object, using a one-part line. If you can't find anything else, use a dead-man anchor.

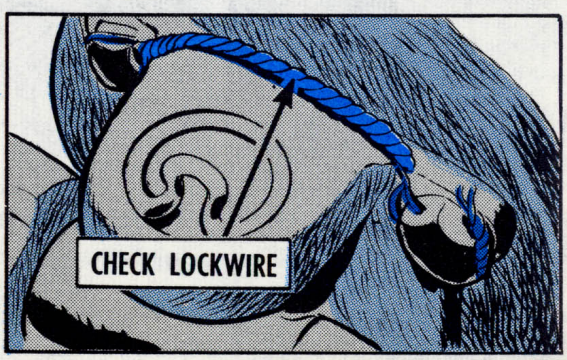


3 Slowly drive the M578 ahead as you gently take up the slack in the boom winch cable. Be careful not to snatch or jerk the cable or wind it too tight.

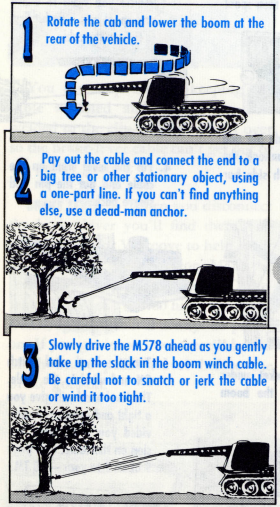


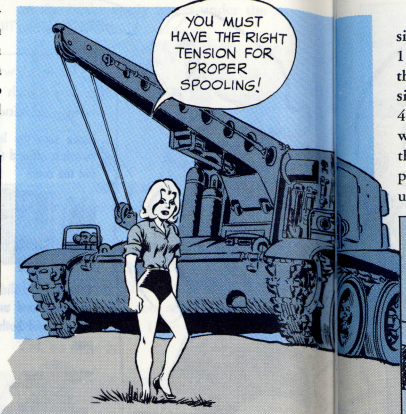
4 With the PTO switch ON, put the boom winch in low gear and at the same time slip the transmission into Range 4 and give the engine full throttle. The vehicle will be dragged backward while trying to go forward and the boom cable will be wound up at 7,500 pounds of tension.

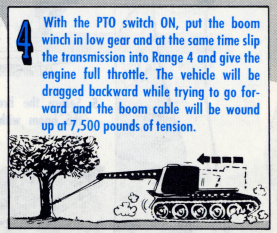
UNIVERSAL JOINT SCREWS — Check your universal joints for broken lockwires and loose screws, and make sure the wire is **not** laced wrong like it shows on page 183 of your -20 TM. The only screws that should be joined with lockwire are those positioned so the lockwire has to cross over the journal flange.



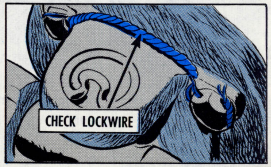
SPOOLING BOOM WINCH — If the boom-winch cable is not wound properly on the drum it can get damaged when you use it for heavy pulling. You need a cable tension of 7,500 pounds to wrap the cable on the drum the way it should go. To get this tension you:



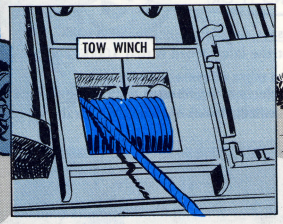




UNIVERSAL JOINT SCREWS — Check your universal joints for broken lockwires and loose screws, and make sure the wire is **not** laced wrong like it shows on page 183 of your -20 TM. The only screws that should be joined with lock-wire are those positioned so the lock-wire has to cross over the journal flange.

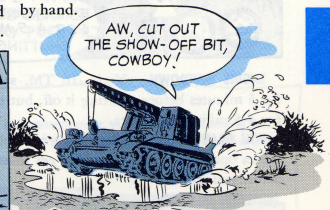


TOW WINCH — You need a lot of tension to wind up the tow cable, so you do 1 and 2 exactly the same as above and 4 the same except you put the transmission into Range 1 instead of into Range 4. Range 1 (Range 2 if your tracks slip) will push the vehicle ahead with a force that will keep the tow cable under proper tension when it is being wound up as the vehicle is pulled backward.

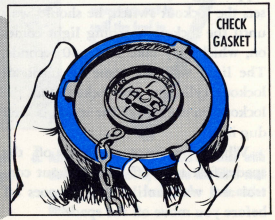


CONTAMINATED FUEL — In spite of everything you can do you might get some bad fuel that'll make one of the injectors stick. If one injector sticks, likely all the injectors on that bank will stick. Get your support to replace the bad injector and you'll be back in business.

FAN WELL — Show-off driving (splashing through mud holes, etc.) will let a lot of mud and water get into the fan wells and, in time, clog the radiators. So hold down on the cowboy stuff! There's no access plate for cleanout or drain for the fan well so if you get it full of mud you've got to clean it out the hard way, by hand.

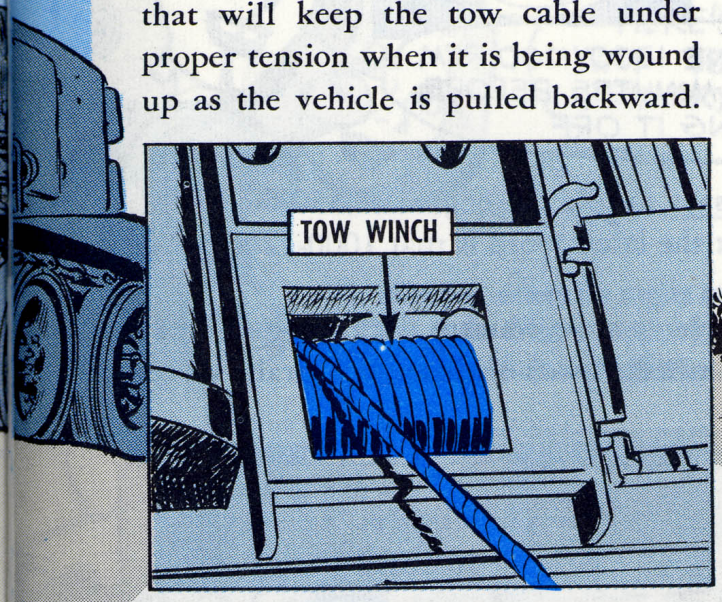


FUEL SYSTEM — Clean, water-free fuel is worth all the effort it takes to keep it that way. Be sure the water-tight fuel tank cap on your top deck is really water tight. **Check** both primary and secondary fuel filters daily and bleed about a cup full from each — more if you get a lot of water mixed with the fuel. (Note: if you have to drain the secondary filter, do it with the engine running.)



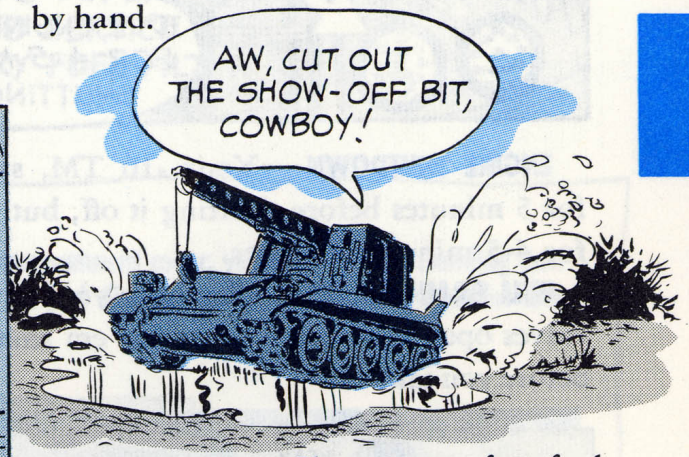
PS MORE

TOW WINCH — You need a lot of tension to wind up the tow cable, so you do 1 and 2 exactly the same as above and 4 the same except you put the transmission into Range 1 instead of into Range 4. Range 1 (Range 2 if your tracks slip) will push the vehicle ahead with a force that will keep the tow cable under proper tension when it is being wound up as the vehicle is pulled backward.

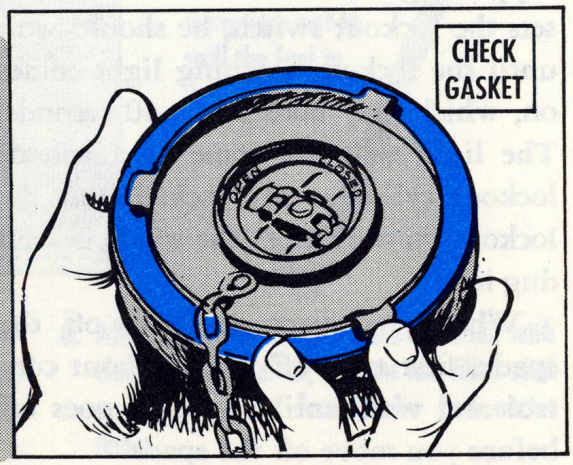


CONTAMINATED FUEL — In spite of everything you can do you might get some bad fuel that'll make one of the injectors stick. If one injector sticks, likely all the injectors on that bank will stick. Get your support to replace the bad injector and you'll be back in business.

FAN WELL — Show-off driving (splashing through mud holes, etc.) will let a lot of mud and water get into the fan wells and, in time, clog the radiators. So hold down on the cowboy stuff! There's no access plate for cleanout or drain for the fan well so if you get it full of mud you've got to clean it out the hard way, by hand.

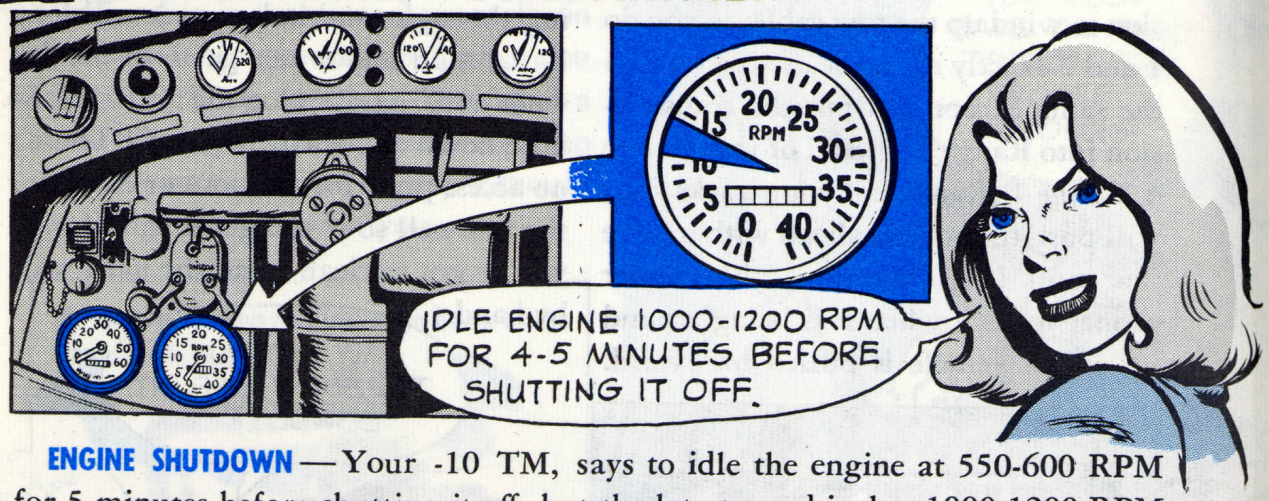


FUEL SYSTEM — Clean, water-free fuel is worth all the effort it takes to keep it that way. Be sure the water-tight fuel tank cap on your top deck is really water tight. **Check** both primary and secondary fuel filters daily and bleed about a cup full from each — more if you get a lot of water mixed with the fuel. (Note: if you have to drain the secondary filter, do it with the engine running.)



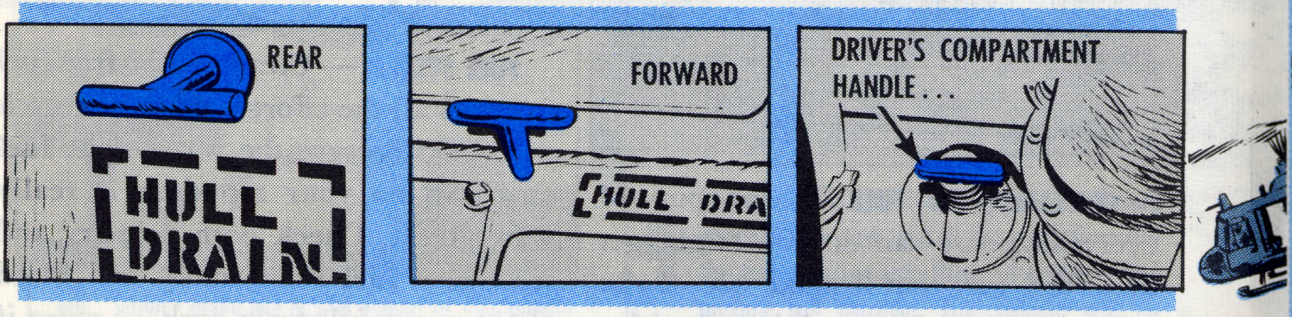
PS MORE

IN THE DRIVER'S COMPARTMENT



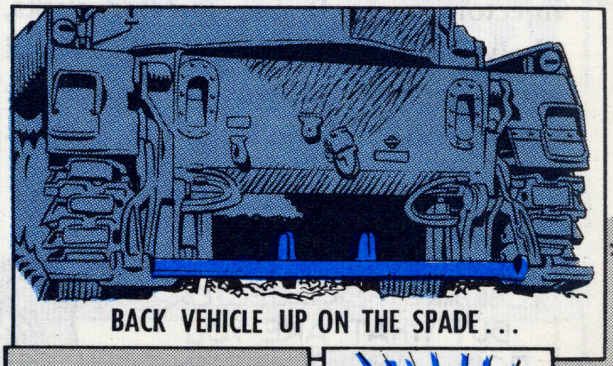
ENGINE SHUTDOWN — Your -10 TM, says to idle the engine at 550-600 RPM for 5 minutes before shutting it off, but the latest word is that 1000-1200 RPM for 4-5 minutes is better.

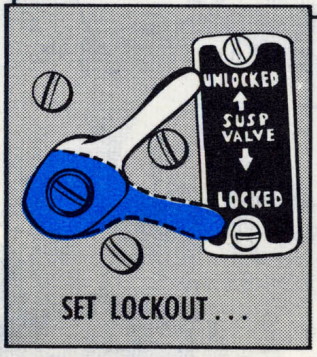
HULL DRAIN VALVES — Running your vehicle cross country with the hull-drain valves open is a sure way to get 'em smashed. So-o-o-o, close all 3 drain valves before you take off.



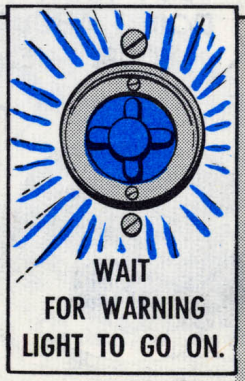
SETTING LOCKOUT — Back the vehicle up on the spade before you lock out the wheels. Reason: If the roadwheels are locked out before then, they're not supporting the load. After the driver sets the lockout switch, he should wait until the lockout warning light comes on, which may take 30 or 40 seconds. The light will not come on until all lockout cylinders are locked. Put the lockout on only after the spade is well dug in.

When you want to move off the spade, first turn off your lockout control and wait until the light goes off before you move off the spade.

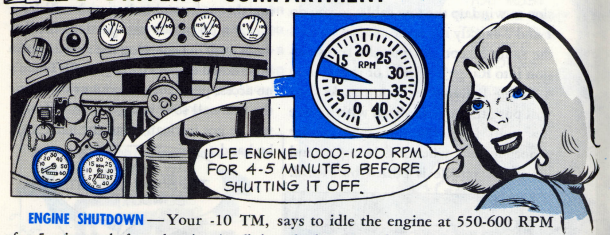

BACK VEHICLE UP ON THE SPADE . . .



SET LOCKOUT . . .

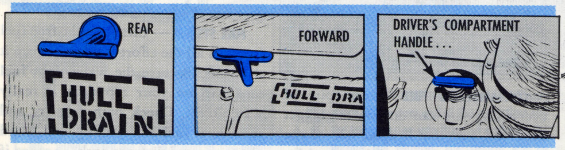

WAIT FOR WARNING LIGHT TO GO ON.

IN THE DRIVER'S COMPARTMENT



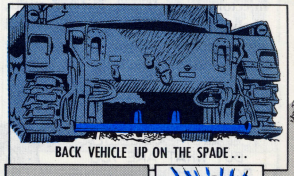
ENGINE SHUTDOWN — Your -10 TM, says to idle the engine at 550-600 RPM for 5 minutes before shutting it off, but the latest word is that 1000-1200 RPM for 4-5 minutes is better.

HULL DRAIN VALVES — Running your vehicle cross country with the hull-drain valves open is a sure way to get 'em smashed. So-o-o-o, close all 3 drain valves before you take off.

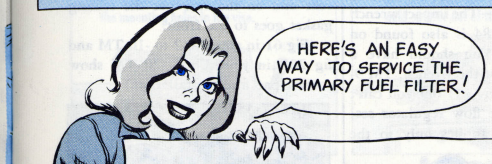


SETTING LOCKOUT — Back the vehicle up on the spade before you lock out the wheels. Reason: If the roadwheels are locked out before then, they're not supporting the load. After the driver sets the lockout switch, he should wait until the lockout warning light comes on, which may take 30 or 40 seconds. The light will not come on until all lockout cylinders are locked. Put the lockout on only after the spade is well dug in.

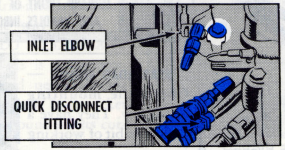
When you want to move off the spade, first turn off your lockout control and wait until the light goes off before you move off the spade.



BULB STOCK NUMBER — The stock number for the high-beam and master-switch indicator bulbs is not listed in the parts manuals for the M578. However, you can order them anyway as lamp FSN 6240-155-7836 (P/N 96906-25237-327). Note that the part number ends in 327, the three numbers that you find stamped on the bulb itself.

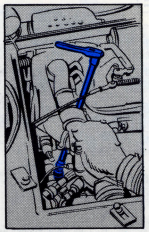


1. After you remove the engine compartment cover, you work from a standing position in the driver's compartment and disconnect the fuel intake and outlet lines at their quick disconnect fittings.

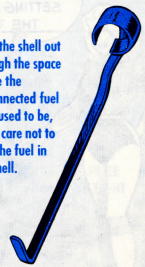


2. Rotate the fuel-inlet elbow on the primary filter in a clockwise direction to line it up with the quick disconnect fitting on the fuel-inlet hose.

3. With the right-sized flex socket, an 18-in extension and a ratchet handle, remove the stud while holding the primary fuel-filter shell with filter shell remover and replacer FSN 5120-903-0874, now one of your new special tools.



4. Take the shell out through the space where the disconnected fuel lines used to be, using care not to spill the fuel in the shell.

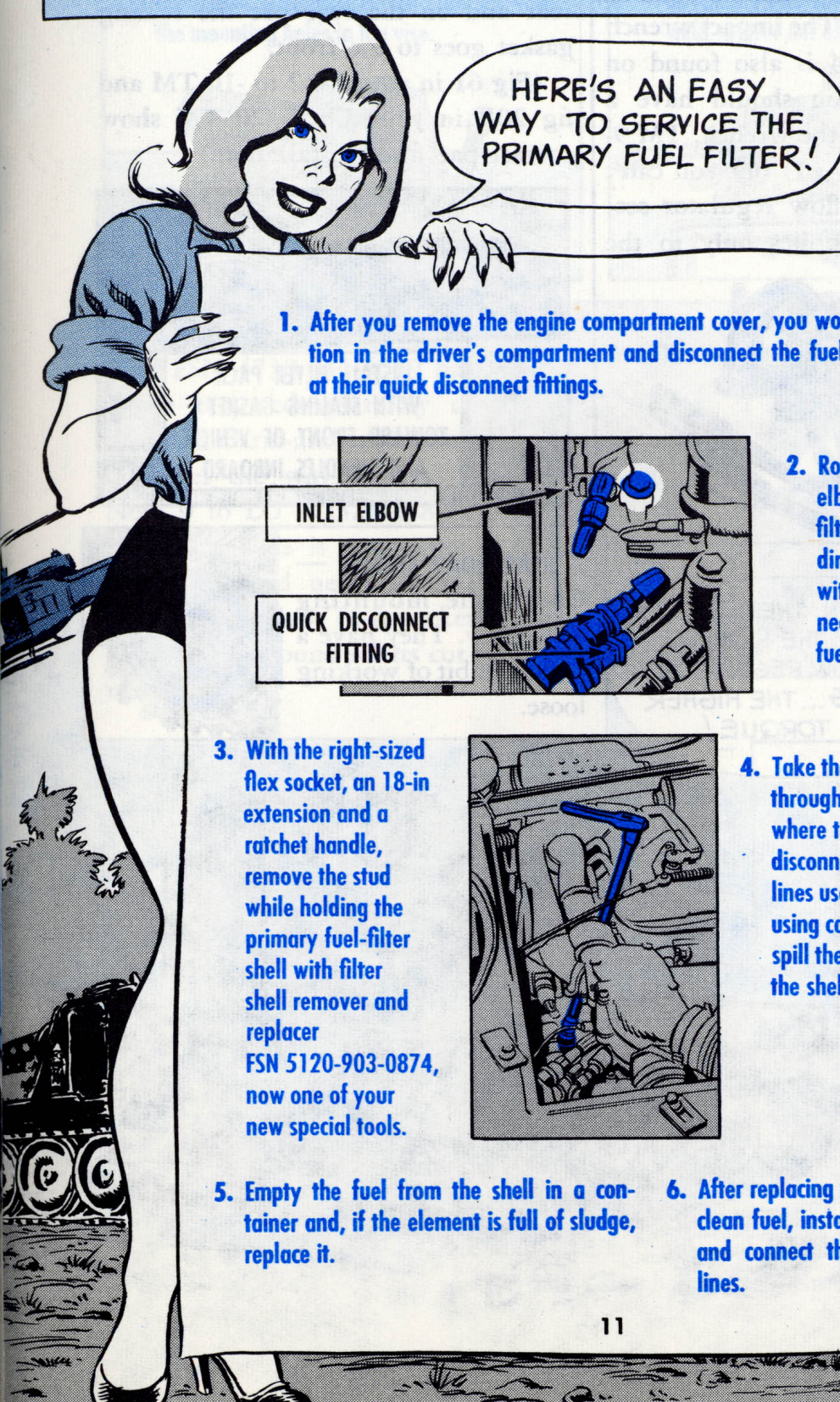


5. Empty the fuel from the shell in a container and, if the element is full of sludge, replace it.

6. After replacing the filter, fill the shell with clean fuel, install it, tighten the filter stud and connect the fuel intake and outlet lines.

MORE

BULB STOCK NUMBER — The stock number for the high-beam and master-switch indicator bulbs is not listed in the parts manuals for the M578. However, you can order them anyway as lamp FSN 6240-155-7836 (P/N 96906-25237-327). Note that the part number ends in 327, the three numbers that you find stamped on the bulb itself.

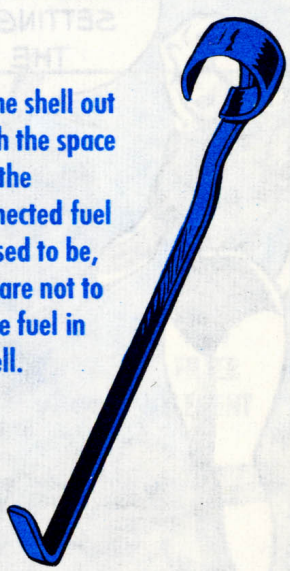


1. After you remove the engine compartment cover, you work from a standing position in the driver's compartment and disconnect the fuel intake and outlet lines at their quick disconnect fittings.

2. Rotate the fuel-inlet elbow on the primary filter in a clockwise direction to line it up with the quick disconnect fitting on the fuel-inlet hose.

3. With the right-sized flex socket, an 18-in extension and a ratchet handle, remove the stud while holding the primary fuel-filter shell with filter shell remover and replacer FSN 5120-903-0874, now one of your new special tools.

4. Take the shell out through the space where the disconnected fuel lines used to be, using care not to spill the fuel in the shell.



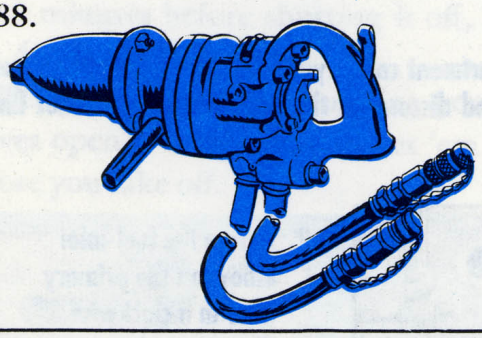
5. Empty the fuel from the shell in a container and, if the element is full of sludge, replace it.

6. After replacing the filter, fill the shell with clean fuel, install it, tighten the filter stud and connect the fuel intake and outlet lines.

P.S. MORE

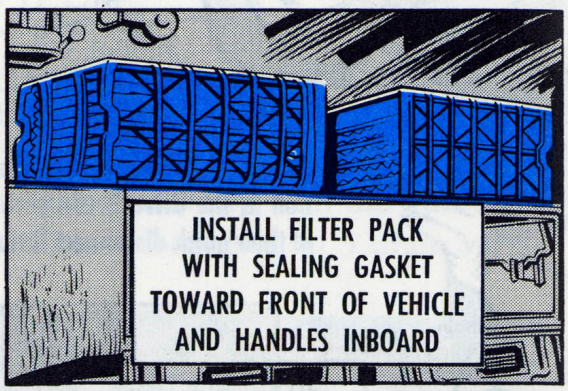
LEFT SIDE

IMPACT WRENCH — The impact wrench FSN 5130-790-2284 is also found on the M88 VTR. You should have a copy of the TM for the wrench, TM 9-5130-338-15P (Nov 61) but you can't use Table III, the flow regulator settings, because it applies only to the M88.

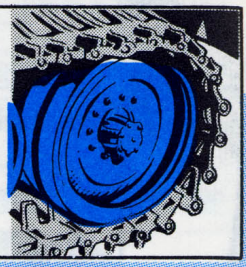


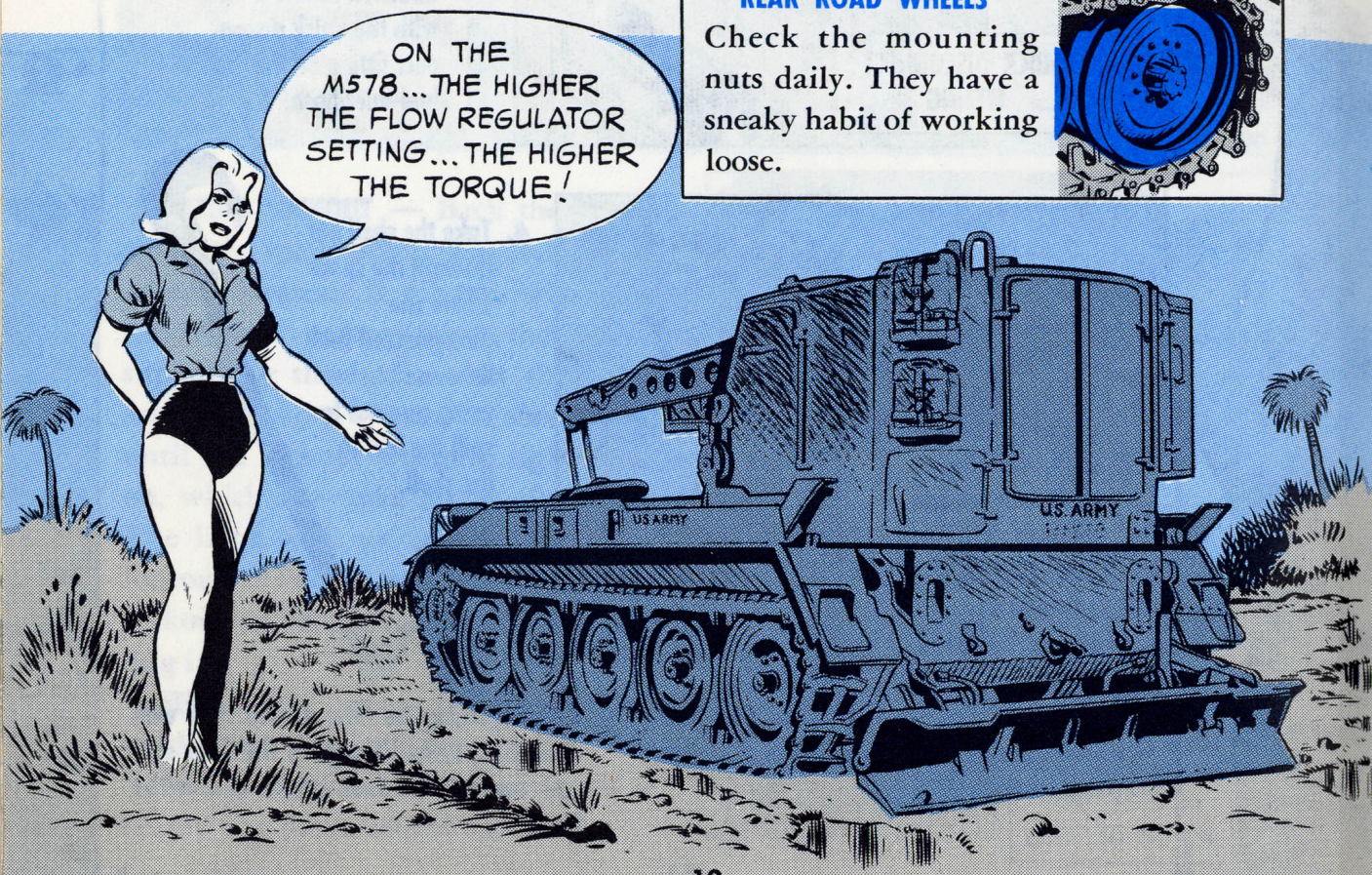
AIR FILTERS — The 2 air filter pacs are alike but you install 'em different. On both of them the lever-like handles go inboard. On the one you put to the front, the sealing gasket goes to the rear and on the rear pac the sealing gasket goes to the front.

(Fig 61 in your Ch 2 to -10 TM and fig 20B in your Ch 1 -20 TM show correct pac filter installation.)



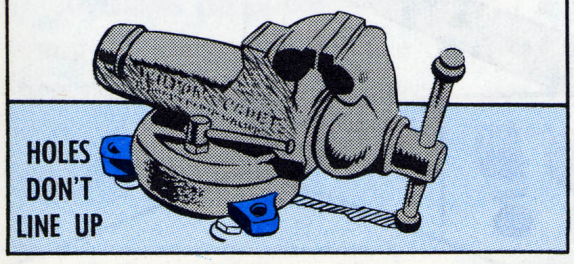
REAR ROAD WHEELS — Check the mounting nuts daily. They have a sneaky habit of working loose.



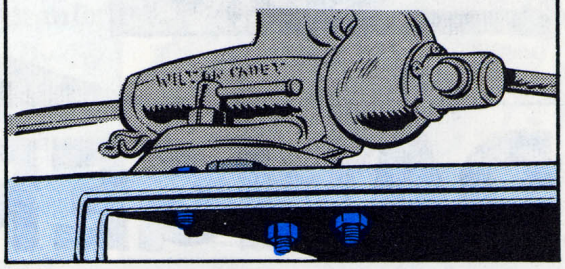


VISE INSTALLATION — As you know, the holes on the bottom of your vise may not match up with the vise mounting holes in the fender sponson. Here's what to do.

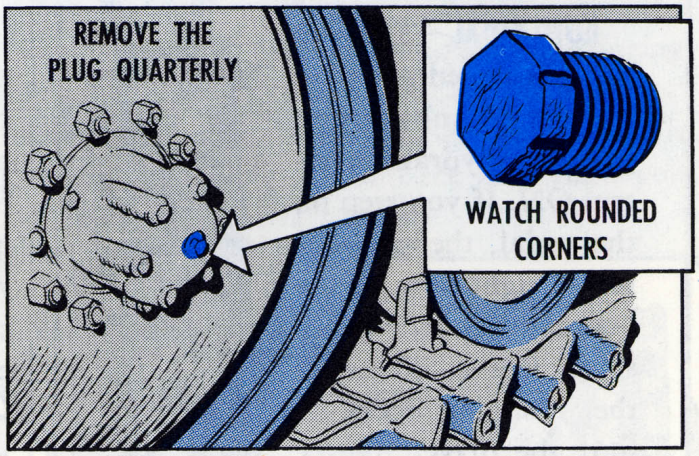
1. Take the filter pacs out of the air-cleaner compartment and weld shut any hole in the fender sponson that won't line up with the mounting holes in the vise.



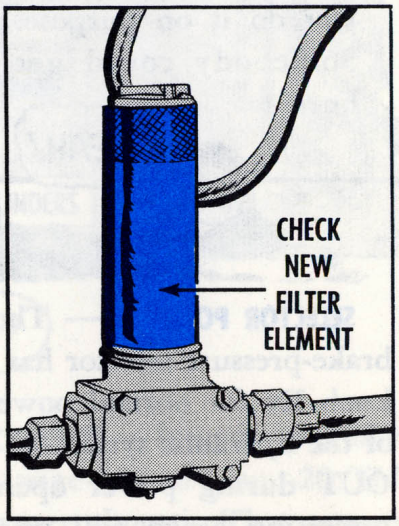
2. Drill a new hole (or holes) as needed. Before putting the filter pacs back, make absolutely sure you get all metal chips and weld spatter out of the compartment.



EASY ON THE PLUG — Pipe plug FSN 4730-044-4619 has to be removed quarterly to check the arm-and-wheel-hub oil level the way it says in Note 9 to LO 9-2320-238-12 (Oct 66). This is a common steel plug and needs careful handling. Use a 9/16-in socket so you don't round off its corners.

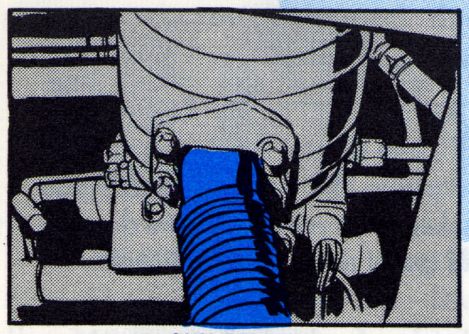


HYDRAULIC FILTER — There's a new filter element for the hydraulic system—Filter Element, fluid pressure, nonreusable, FSN 4330-042-6548 (P/N 96906-MS-28897-12). It's under the floor of the cab.



Replace this filter element Quarterly or when the red button on the filter assembly body sticks out about a quarter of an inch. The old filter element, FSN 4330-811-9705 (P/N 96906-MS-28897-12C) has been discontinued.

P.S MORE

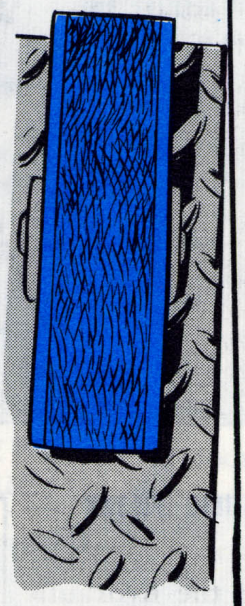


ANY LEAKS?

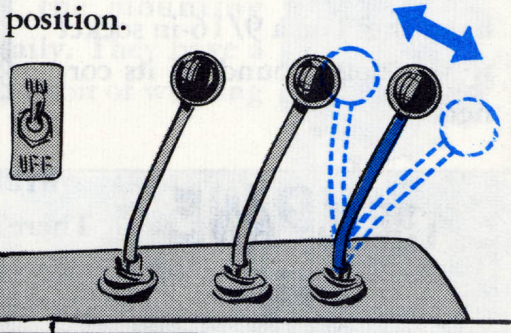
HYDRAULIC HOSE — The metal hose from the main reservoir to the hydraulic pump slip ring assembly sometimes leaks. If this happens and you can't get a replacement part use a rubber hose until you can.

DANGER!

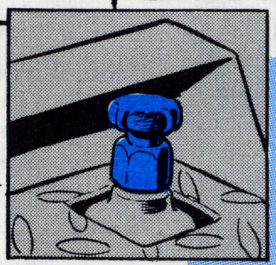
ROTO PEDAL—The roto pedal is armed and dangerous whenever you have the hydraulic system ON. If you step on the pedal, the cab will rotate right now. If the boom is in the travel position this could break the retaining loop or hurt the driver. Never step on the pedal unless you do it on purpose. Somebody could get hurt.

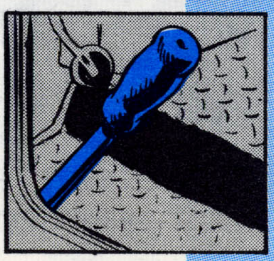


BOOM CYLINDER CONTROL — With the hydraulic system ON, the boom cylinder control will move the boom if the control is pushed out of the center position, either on purpose or by accident. So be sure you don't move the control, 'specially when the boom is in travel position.



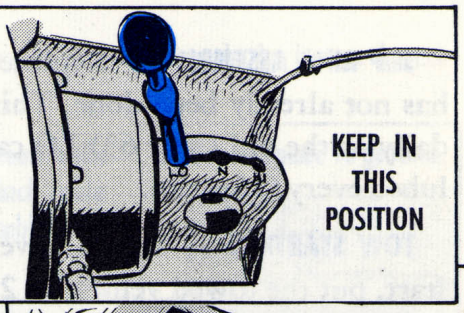
SELECTOR POSITION — The traversing brake-pressure selector has to have the knob IN for normal power operation of the hydraulic system. If the knob is OUT during power operation, your traversing brake will go on and off rapidly with a chattering sound. To stop this you have to change the knob setting to IN.



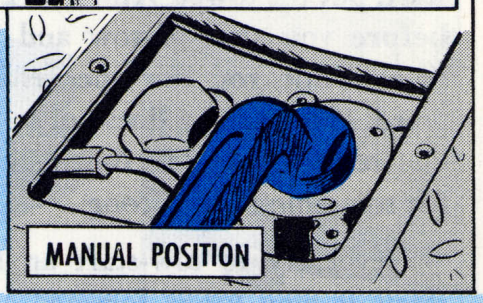


If you have to operate the traverse manually, first pull OUT on the knob (it's under the floor in the rigger's compartment) and then work the hand pump to the right of the rigger's seat. This will let off the traversing brake and the cab can then be traversed into position by pushing on the boom.

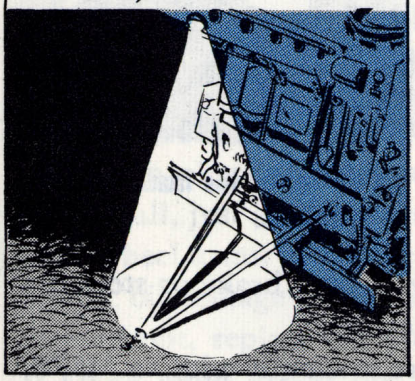
HOIST WINCH — The hoist winch range selector shows a Hi and a Lo operating position but it's best to use only the Lo, both for paying out the cable and for winching it in. The Hi gives a speed of 303 feet per minute — too fast for most uses.



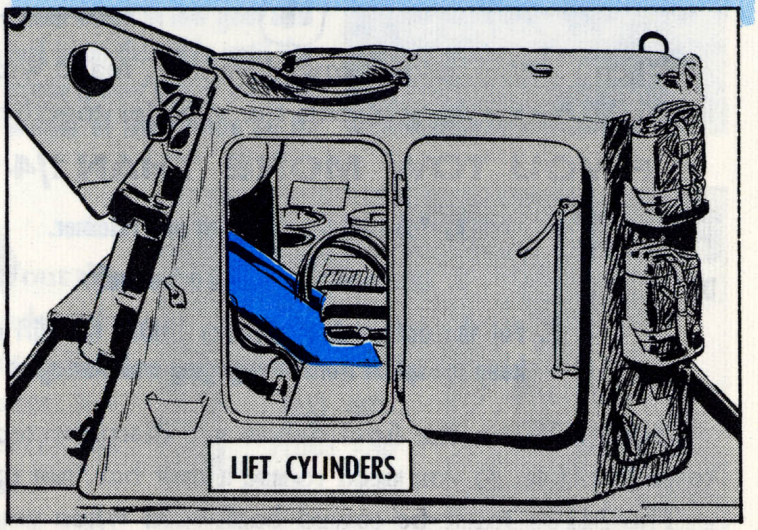
LOWERING THE BOOM — If you get a hydraulic hang-up you can move the boom manually by first taking off the access cover under the rigger's seat and then turning the valve to manual operation.



NIGHT OPERATION — If you have to hook up a towbar at night you might wish there was a spotlight on the rear of the cab. However, by manipulating the boom, you can get its floodlight to shed some light on the subject.



SELF-RECOVERY — When you have to raise the boom to keep the cable off the deck plate during self-recovery, be careful not to raise the boom too high or the winch drum will rub against the lift cylinders. Check it out and see how high you can go before you start to rub.

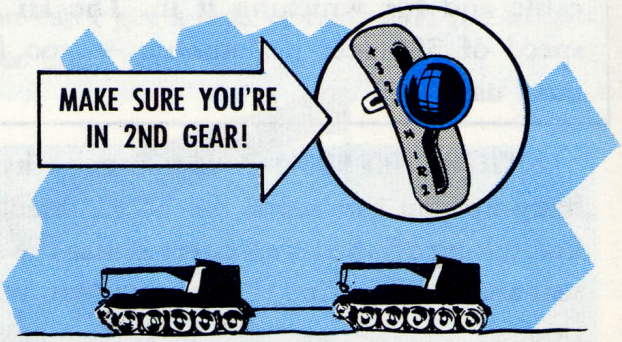


MAGNETIC CLUTCH — It won't look like the one on page 187 of your -20 TM but don't worry about it. That was an experimental model that never got into production. Yours is on pages 144 and 184 of the TM.

P.S. MORE

SLIP RING ASSEMBLY — Replace the 2 lube fittings with square-head plugs if this has not already been done. This'll discourage anybody from trying to lube 'em daily as the old (Mar 63) LO called for. The slip ring bearings should be lightly lubed every Q Service.

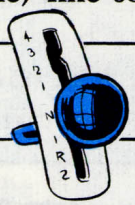
TOW STARTING — If you have to tow start, put the towed vehicle in 2nd gear **before** you start to tow and leave it there while you tow the vehicle forward. If the engine does not start when you reach a speed of 6-8 MPH, check for something else wrong.



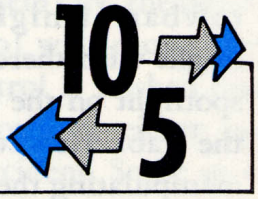
Never try to tow-start an M107 with an M578, because when the M107 starts it may lunge forward and ram its gun tube into the rear of the M578.

TOWING DISABLED VEHICLE — You can tow a disabled vehicle for a short distance (less than a quarter mile) like so . . .

1. Put towed vehicle shift in N (neutral) position.

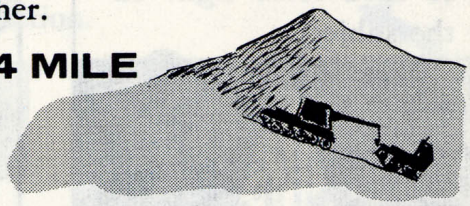


2. Do not go over 10 MPH ahead or 5 MPH in reverse.



When turning with a towed vehicle, make wide turns to keep from damaging the tow bar or bumping the vehicles together.

IF YOU TOW MORE THAN 1/4 MILE



FIRST DISCONNECT FINAL DRIVES

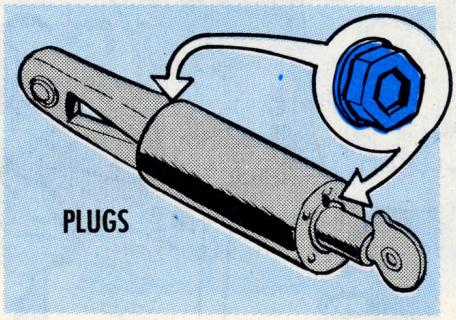
1. Take off the drive nut and retainer.
2. Disconnect both final drive shafts.
3. Put the output drive retainer UNDER the NUT and put the nut on the transmission to keep the spline from re-engaging and damaging the spline threads.

CAREFUL: When the final drives are disconnected, you can't brake or steer the towed vehicle, so you need to use a tow bar, not tow cables.

The M107 must be towed backward when you are towing it with an M578, because a standard tow bar is not long enough to let the gun tube of the M107 clear the back of the M578 when the gun is in the travel position.

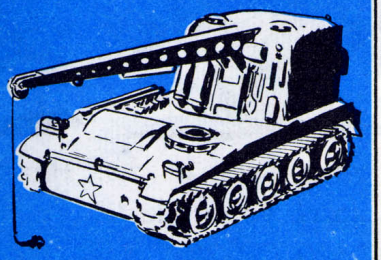
When you need warning lights on a towed or disabled vehicle, use portable flasher light, FSN 6220-796-2657.

LOCKOUT CYLINDERS — The allen plugs on the locking rings of the 8 lockout cylinders sometimes get loose. Check to make sure they are torqued to 40 lb-ft. If they are much over that they're too tight.

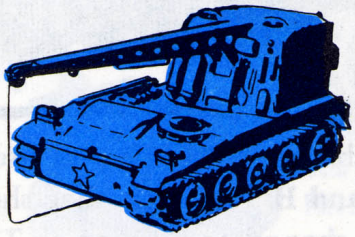


EMPLACING SPADE — Here's an aid to help you emplace your spade in ice or hard ground . . .

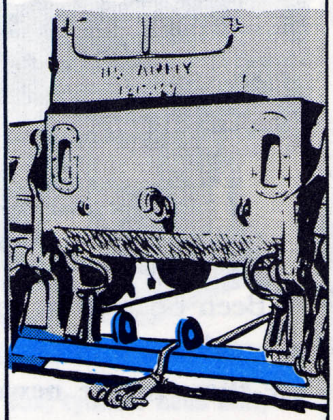
1. Lower your boom-winch cable to the ground about 2 feet ahead of where you want to put the spade.



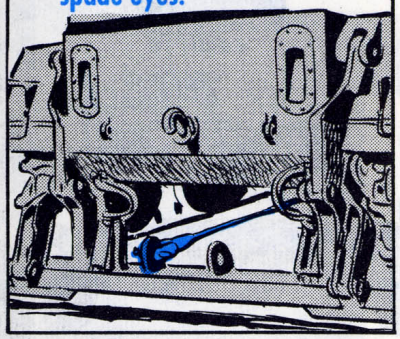
2. Now drive the vehicle ahead while paying out the boom-winch cable until you can get at the cable from the rear of the vehicle.



3. Lower spade to ground.



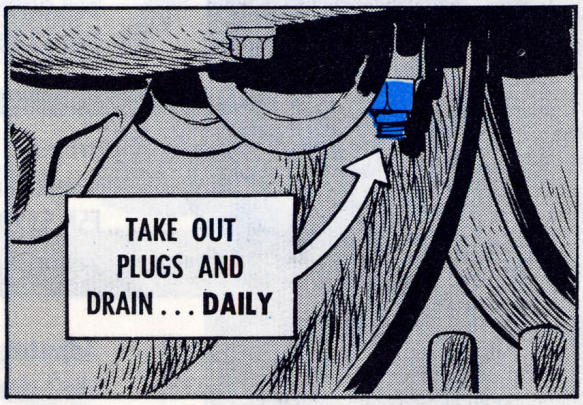
4. Attach the boom-winch cable to either one of the spade eyes.



5. While backing up the vehicle with the suspension in the unlocked position and the control valve set for spade emplacement, put the boom winch in low gear and reel in on the cable until the spade is over center with the weight of the vehicle on it.

6. Release the tension on the boom-winch cable, disconnect it from the spade and reel it back in.

7. After the spade is emplaced and winch cable is all reeled in, lock out suspension system.

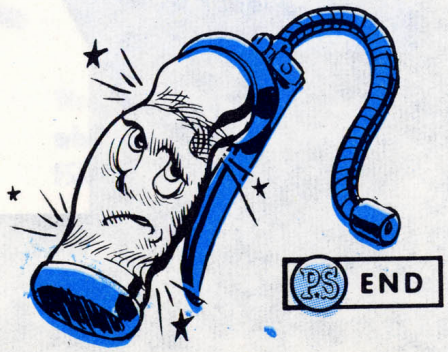


DRAIN PLUGS — Every day take out the hull drain plugs at the rear underside of the hull, just inboard of the trailing idler wheel arms. After the water, hydraulic oil leakage (and whatever) has drained out, replace the plugs.

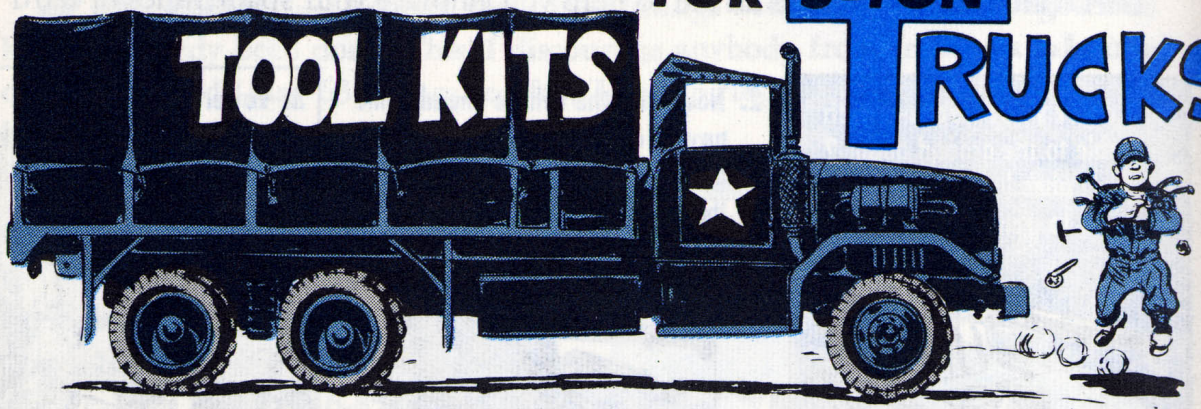
Those plugs are at the lowest part of the hull and when you open 'em you get rid of the moisture that otherwise would seep through the trailing idler wheel seals and damage the bearings in the hull.

The plugs are easy for the operator to get to from the outside of the vehicle and easy to drain. Do it daily.

GREASE GUN — The 16-oz grease gun may not fit in its brackets. If you have this trouble it's OK to bend or reposition the brackets so they fit.



TOOL KITS FOR 5-TON TRUCKS

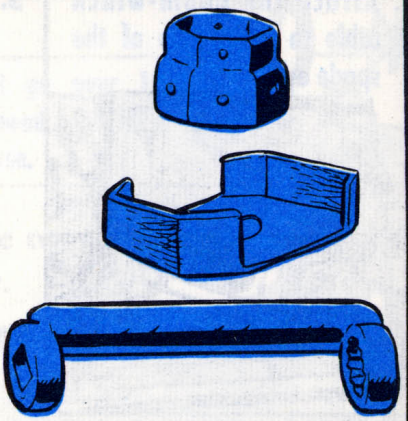


Been puzzled as to what special tools you use on your 5-ton trucks? Here's a breakdown of the A and B Tool Kits that should solve your puzzle. You'll see these in the newest change or revision to TM 9-2320-211-20P.

TOOL KIT A

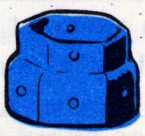
M39 Series Gasoline, FSN 4910-313-3047, consists of:

- **Wrench, wheel bearing nut, FSN 5120-378-3139**
- **Wrench, air compressor belt adjusting, FSN 5120-390-7779**
- **Wrench, box cyclinder head bolt FSN 5120-473-6511**



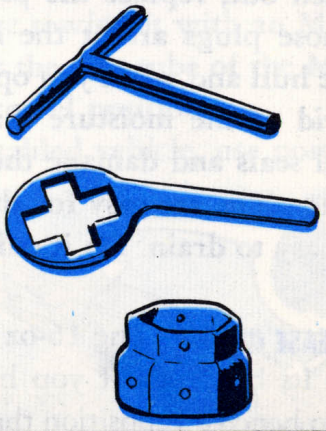
M39A1 Series Diesel, FSN 4910-983-3908, consists of:

- **Wrench, wheel bearing nut, FSN 5120-378-3139**



M39A2 Series Multifuel, FSN 4910-071-0739, consists of:

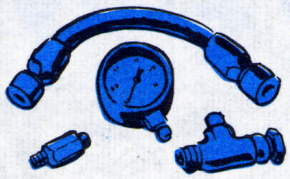
- **Adjuster, shaft starter solenoid, FSN 4910-792-8626**
- **Wrench, adjusting air compressor pulley, FSN 5120-070-7809**
- **Wrench, wheel bearing nut, FSN 5120-378-3139**



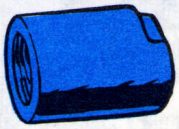
TOOL KIT B

M39 Series Gasoline
FSN 4910-795-0827,
consists of:

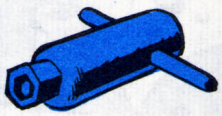
Kit, checking oil
pressure in power steering,
FSN 4910-627-7043 (in box)



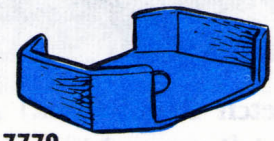
Adapter, steering wheel;
(used w/5120-422-8570 Puller),
FSN 5120-303-1195



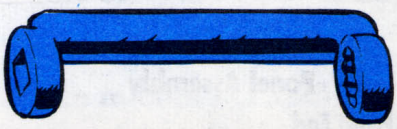
Wrench, socket,
engine oil filter,
seal plate bolt,
FSN 5120-473-7741



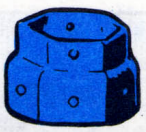
Wrench,
air compressor
belt adjusting,
FSN 5120-390-7779



Wrench, box, cylinder head bolt,
FSN 5120-473-6511

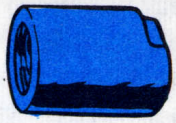


Wrench,
wheel bearing nut,
FSN 5120-378-3139

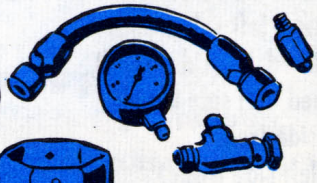


M39A1 Series Diesel,
FSN 4910-983-3909,
consists of:

Adapter, steering wheel
(use w/5120-422-8510 Puller),
FSN 5120-303-1195



Kit, checking oil
pressure in power steering,
FSN 4910-627-7043 (in box)



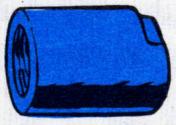
Wrench,
wheel bearing nut,
FSN 5120-378-3139

M39A2 Series
Multifuel,
FSN 4910-071-0740,
consists of:

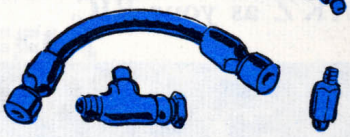
Adjuster,
Shaft starter solenoid,
FSN 4910-792-8626

Wrench, adjusting
air compressor pulley,
FSN 5120-070-7809

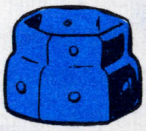
Adapter, steering wheel
(use w/5120-422-8510
Puller),
FSN 5120-303-1195

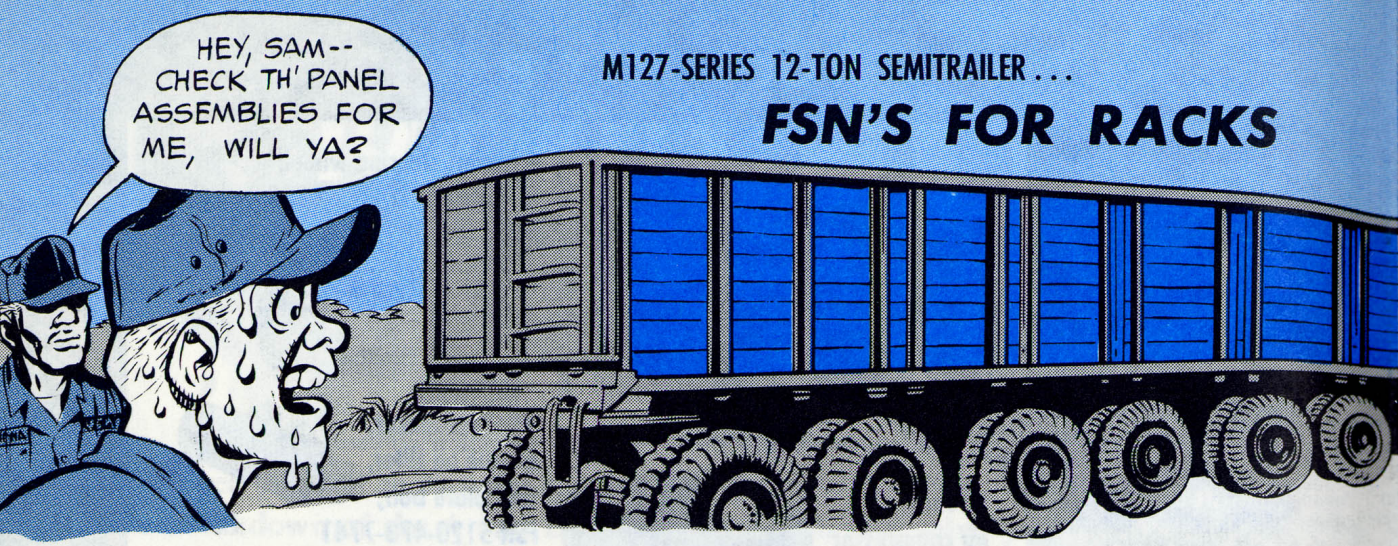


Kit, checking oil
pressure in power steering,
FSN 4910-627-7043 (in box)



Wrench,
wheel bearing nut,
FSN 5120-378-3139



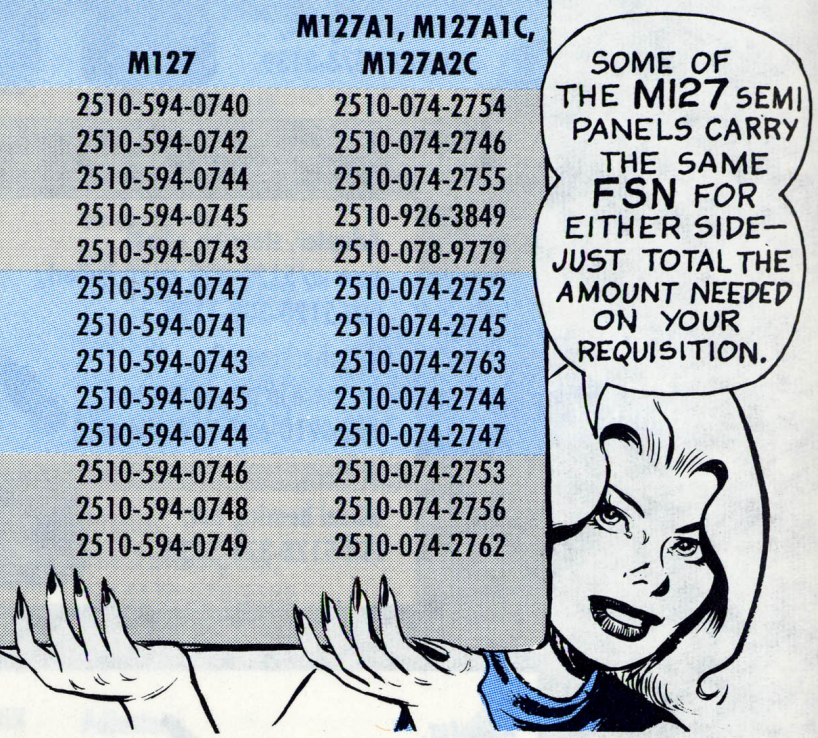


M127-SERIES 12-TON SEMITRAILER . . .
FSN'S FOR RACKS

Lookin' for FSN's that'll fetch Panel (rack) Assemblies for any one of your M127 series 12-ton trailer? End the searchin' and scan these FSN's for size:

Panel Assembly	M127	M127A1, M127A1C, M127A2C
Front End	2510-594-0740	2510-074-2754
Front, right side (curb)	2510-594-0742	2510-074-2746
Front, intmed, right side (curb)	2510-594-0744	2510-074-2755
Center, intmed, right side (curb)	2510-594-0745	2510-926-3849
Rear, intmed, right side (curb)	2510-594-0743	2510-078-9779
Rear, right side (curb)	2510-594-0747	2510-074-2752
Front, left side (road)	2510-594-0741	2510-074-2745
Front, intmed, left side (road)	2510-594-0743	2510-074-2763
Center, intmed, left side (road)	2510-594-0745	2510-074-2744
Rear, intmed, left side (road)	2510-594-0744	2510-074-2747
Rear, left side (road)	2510-594-0746	2510-074-2753
Rear End, left side (road)	2510-594-0748	2510-074-2756
Rear End, right side (curb)	2510-594-0749	2510-074-2762

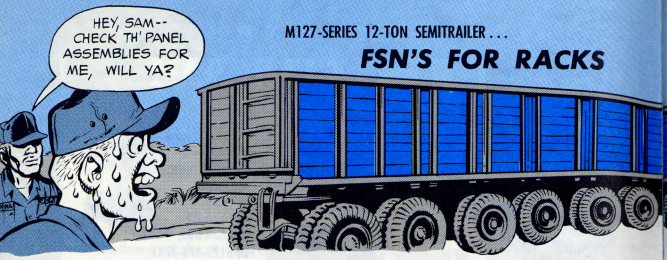
(intmed = intermediate)



You won't find this rundown in any supply pub yet, but the US Army Tank-Automotive Command announced them as good numbers. When ordering use AKZ as your RIC.

BODY & FENDER REPAIR

No use to look for an SM on the body and fender repair tool kit, FSN 5180-754-0643. SM 9-4-5180-J10-7 was rescinded by SM 9-4-5180-A60 which was rescinded by DA Circular 310-29 (Mar 65). The only place you'll find that kit listed is in the Fed Cat C5180-IL-A or one of its changes.



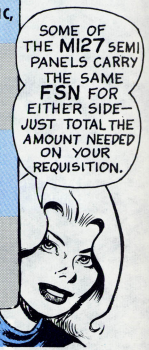
M127-SERIES 12-TON SEMITRAILER . . .

FSN'S FOR RACKS

Lookin' for FSN's that'll fetch Panel (rack) Assemblies for any one of your M127 series 12-ton trailer? End the searchin' and scan these FSN's for size:

Panel Assembly	M127	M127A1, M127A1C, M127A2C
Front End	2510-594-0740	2510-074-2754
Front, right side (curb)	2510-594-0742	2510-074-2746
Front, intmed, right side (curb)	2510-594-0744	2510-074-2755
Center, intmed, right side (curb)	2510-594-0745	2510-926-3849
Rear, intmed, right side (curb)	2510-594-0743	2510-078-9779
Rear, right side (curb)	2510-594-0747	2510-074-2752
Front, left side (road)	2510-594-0741	2510-074-2745
Front, intmed, left side (road)	2510-594-0743	2510-074-2763
Center, intmed, left side (road)	2510-594-0745	2510-074-2744
Rear, intmed, left side (road)	2510-594-0744	2510-074-2747
Rear, left side (road)	2510-594-0746	2510-074-2753
Rear End, left side (road)	2510-594-0748	2510-074-2756
Rear End, right side (curb)	2510-594-0749	2510-074-2762

(intmed = intermediate)



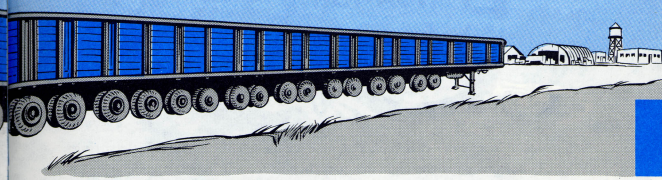
You won't find this rundown in any supply pub yet, but the US Army Tank-Automotive Command announced them as good numbers. When ordering use AKZ as your RIC.

BODY & FENDER REPAIR

No use to look for an SM on the body and fender repair tool kit, FSN 5180-754-0643. SM 9-4-5180-J10-7 was rescinded by SM 9-4-5180-A60 which was rescinded by DA Circular 310-29 (Mar 65). The only place you'll find that kit listed is in the Fed Cat C5180-IL-A or one of its changes.

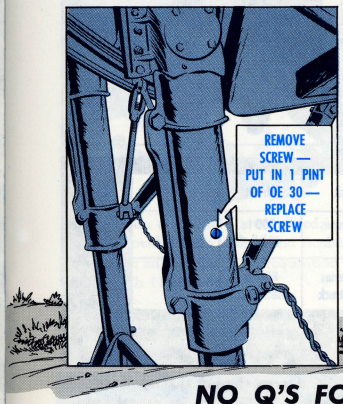
G750-SERIES SEMITRAILER . . .

LANDING LEG LUBE



Down . . . w-a-a-a-y down . . . all the way down.

Yep, you gotta crank those landing legs all the way down when your M127 or other G750-series 12-ton semitrailer gets its regular dose of lube.



Like you see in both LO 9-2330-207-12 (May 63) and the lube chart in TM 9-2330-207-14 (Jun 61), the landing-gear-support legs are lubed with OE 30. But you have to have the legs extended all the way down so the oil will run into the reservoir in the bottom section of leg.

Each leg gets 1 pint of OE 30. Give the oil about 15 minutes to get down into the reservoir before you crank the legs back up.

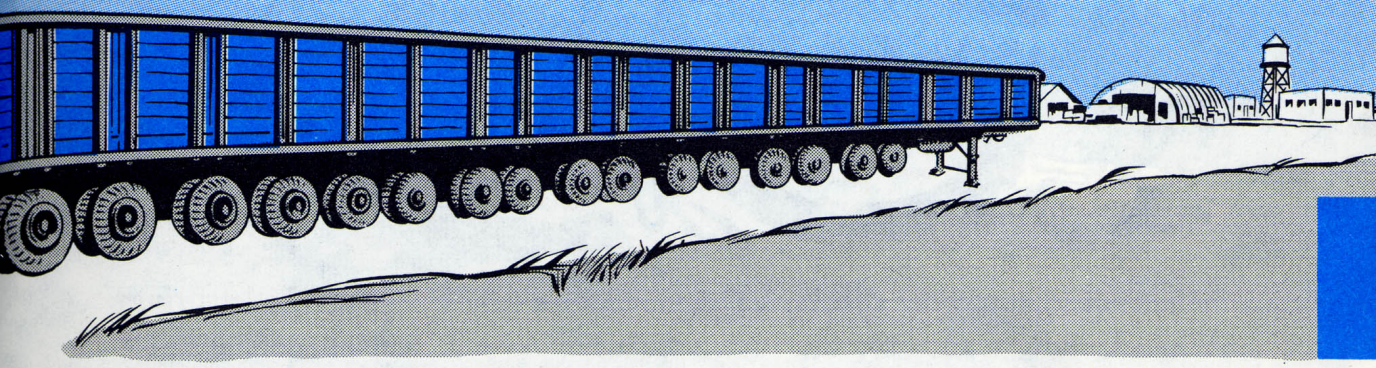
This poop will be showing up in a TM change or revision.

NO Q'S FOR WHEELS

That's right—no quarterly preventive maintenance services for tactical wheeled vehicles. This was the word in DA Cir 750-10 (Apr 63). If your truck or trailer TM calls for a Q service, you still pull the same service but as a semiannual (S service) instead of a quarterly. Until your TM picks it up, the word in DA Cir 750-10 (Apr 63) is still good. Make a note for yourself.

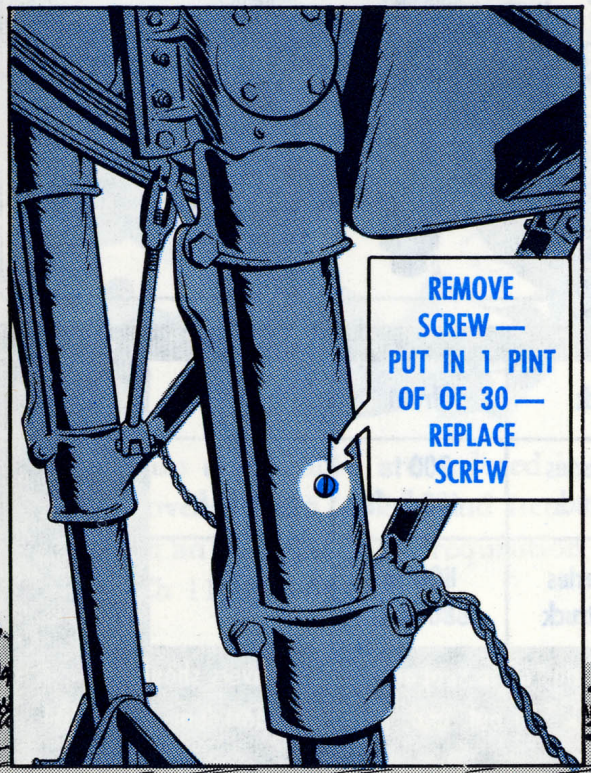
G750-SERIES SEMITRAILER . . .

LANDING LEG LUBE



Down . . . w-a-a-a-y down . . . all the way down.

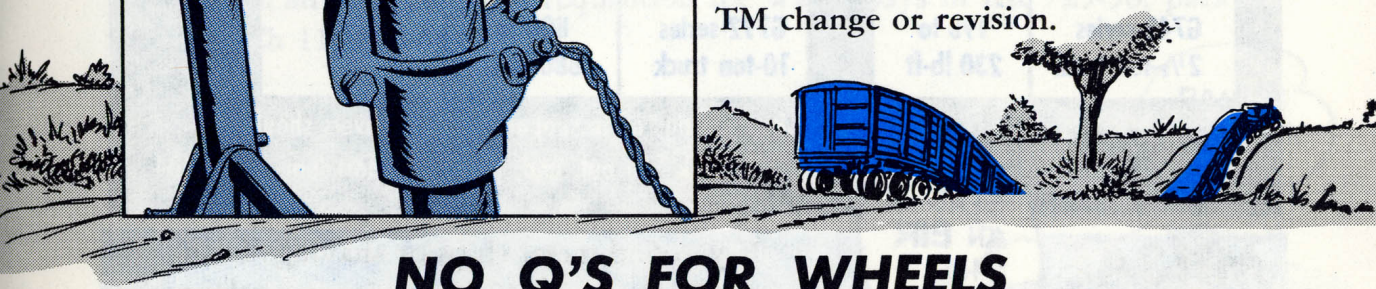
Yep, you gotta crank those landing legs all the way down when your M127 or other G750-series 12-ton semitrailer gets its regular dose of lube.



Like you see in both LO 9-2330-207-12 (May 63) and the lube chart in TM 9-2330-207-14 (Jun 61), the landing-gear-support legs are lubed with OE 30. But you have to have the legs extended all the way down so the oil will run into the reservoir in the bottom section of leg.

Each leg gets 1 pint of OE 30. Give the oil about 15 minutes to get down into the reservoir before you crank the legs back up.

This poop will be showing up in a TM change or revision.



NO Q'S FOR WHEELS

That's right – no quarterly preventive maintenance services for tactical wheeled vehicles. This was the word in DA Cir 750-10 (Apr 63). If your truck or trailer TM calls for a Q service, you still pull the same service but as a semiannual (S service) instead of a quarterly. Until your TM picks it up, the word in DA Cir 750-10 (Apr 63) is still good. Make a note for yourself.

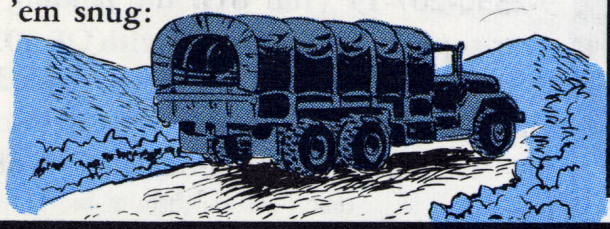
SPRING U-BOLT NUTS LOOSE?

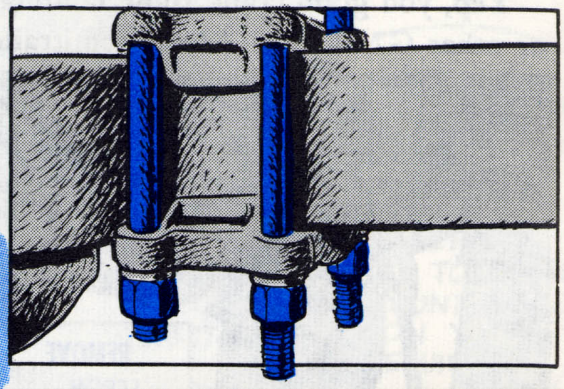
WHAT A RE BOLTING SITUATION!

What you don't know can hurt you — like loose U-bolts on vehicle springs.

When U-bolt nuts get the right torque, they shouldn't loosen up — but sometimes they do. You drivers should check 'em out about once a week. Report any loose ones you find on your 2404 inspection form.

Your mechanic will follow up by putting the right torque on 'em. You might be surprised at how much torque those Spring U-bolt nuts need to keep 'em snug:





truck	front and rear
G741-series ¾-ton truck	130 to 140 lb-ft
G742-series 2½-ton truck	190 to 230 lb-ft

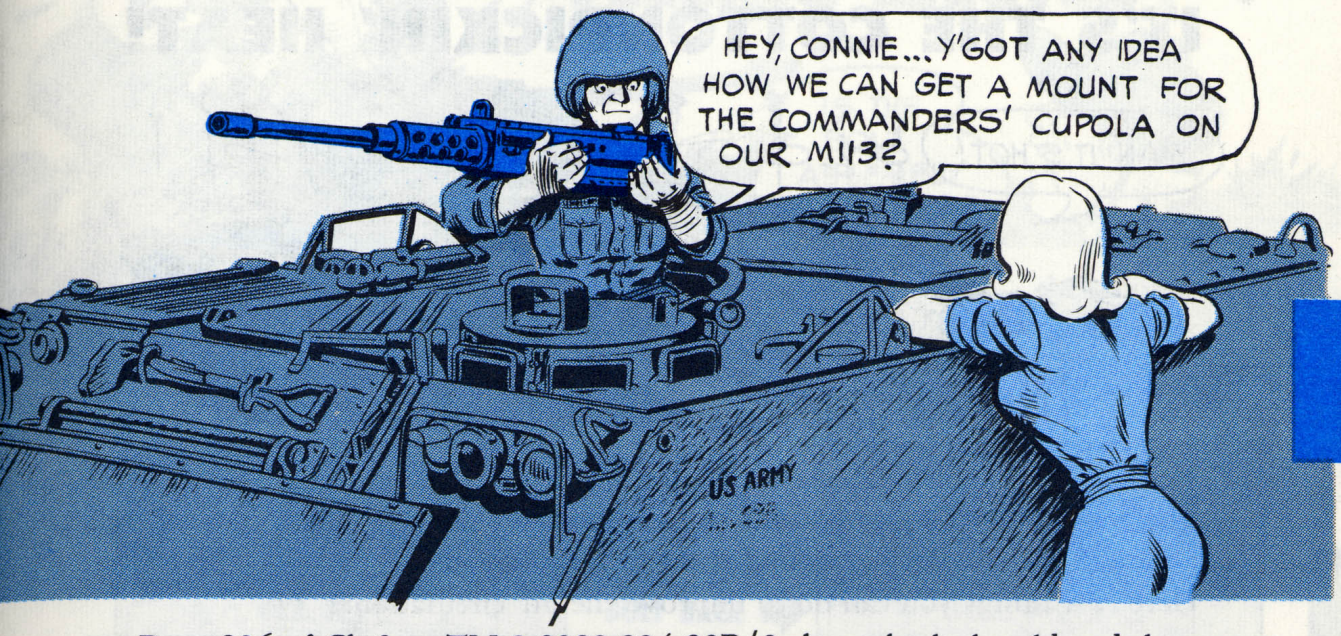
truck	front	rear
G744-series 5-ton truck	300 to 400 lb-ft	350 to 450 lb-ft
G792-series 10-ton truck	800 to 880 lb-ft	*

* Rear springs are a support job, but drivers should still check 'em out, and, if loose, report 'em on a 2404.

M113A1 METAL CHIPS

If you find metal chips or shavings in the engine oil of your M113A1 carrier, turn the entire vehicle in to support right away. Reason: poor oil distribution in the engine caused by the metal would affect wearing surfaces. Even if you could get all the metal out, continued operation could damage the engine still more.

M113 CARRIER GUN MOUNT



Page 206 of Ch 3 to TM 9-2300-224-20P/3 shows both the old and the new mount as non-supply.

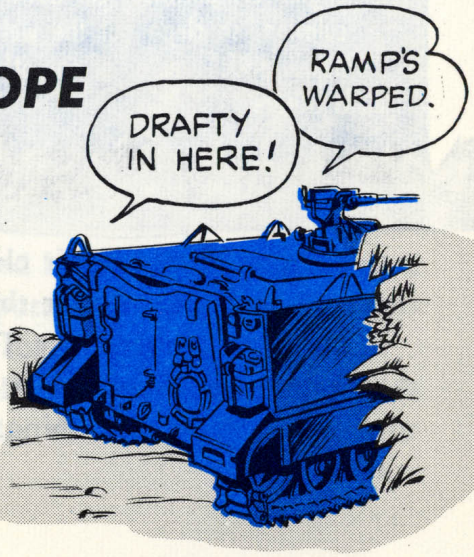
The mount support, Items 5 and 13 on page 206, P/N 10861550, is now available for issue under FSN 2590-933-4630.

To complete the assembly you'll need several other items listed on page 206.

The items with FSN's are ordered in the usual way. The 2 without FSN's, Item 3, Cover, P/N 5265248 and Item 15, Pin, P/N 96906-16555-360 are ordered with an exception data requisition the way it says in AR 725-50, para 3-20.1, in Ch 11 (Oct 66).

M113 RAMP DOPE

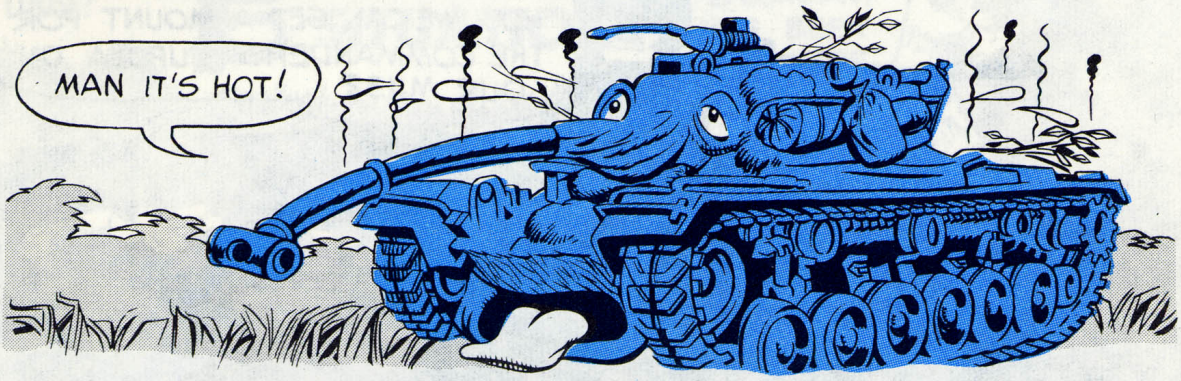
Once the ramp on your M113 carrier gets bent so it no longer fits right, get a new ramp. Turn the old one over to your support on the slim chance that they can fix it. If you try to do the job, it'll be a waste of a good mechanic's time. The only way to fix a bent ramp is to keep it from getting bent in the first place. You do this by lowering the ramp slowly to the ground.



FIREPOWER

NEVER MIND THE HUMIDITY...

IT'S THE COTTONPICKIN' HEAT!



Your M48A3 tank will lose its cool if it gets overheated.

Too many M48A3 engines and transmissions are conking out because there's not enough air circulating around them to beat the heat.

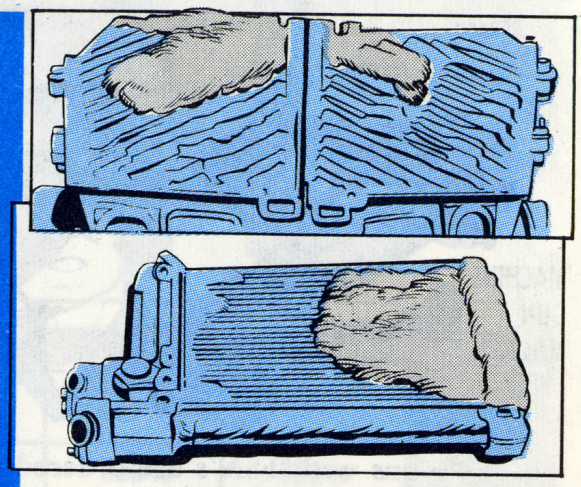
Here're 4 things you can do to improve the air circulation:

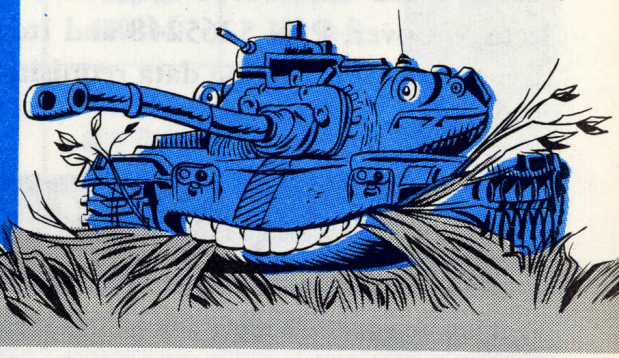
1. Keep the engine grille doors clear of bed rolls, ammunition boxes and other stowage.

2. Make sure the rear exhaust door fins are not mashed shut or clogged with twigs and mud. You can use your crowbar to pry the fins open.

3. If your oil cooler radiators are clogged with mud they won't let the heat out. So, keep them clean.

4. Mud, leaves, twigs, and assorted junk in the engine compartment cut down on the air circulation, so clean out the well whenever the power pack is pulled or any other time you get a chance.



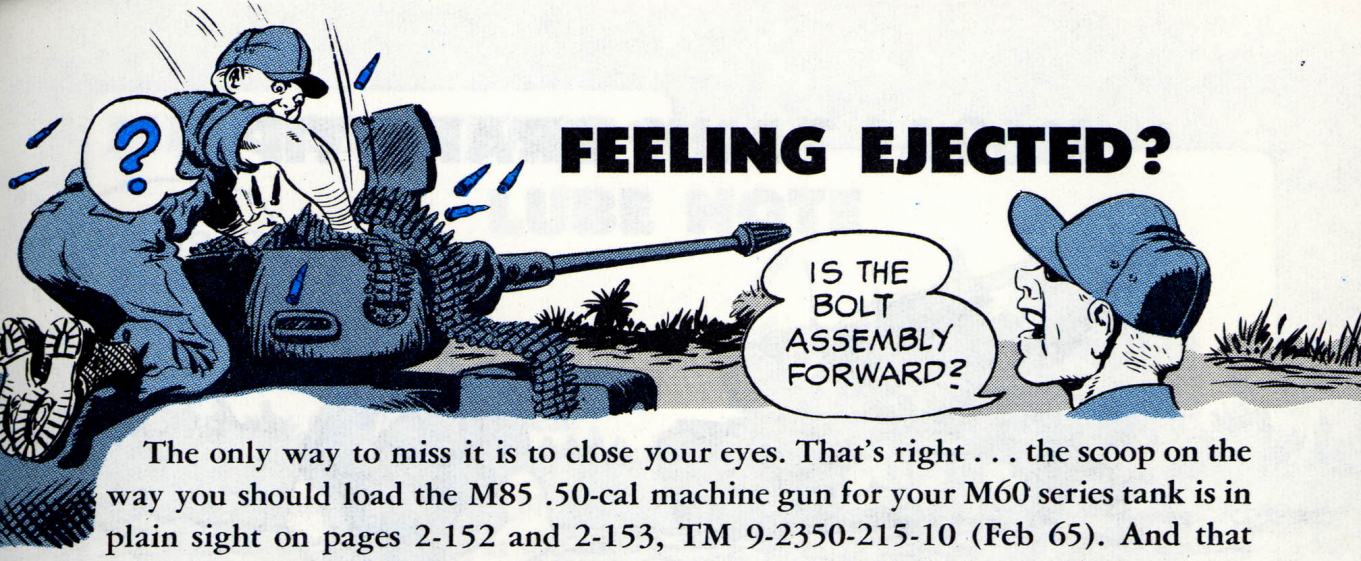


Clogged filters in air cleaners and oil and fuel lines can make the engine and transmission run hotter than they should.

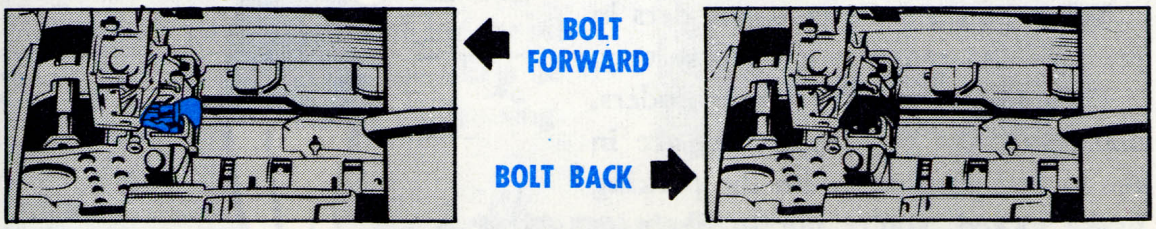
Drag out your trusty TM 9-2350-224-20 (Jan 66) with its 3 changes, and service these filters like it says.

Take care of these things and you'll keep your cool and so will your M48A3 tank.

FEELING EJECTED?



The only way to miss it is to close your eyes. That's right . . . the scoop on the way you should load the M85 .50-cal machine gun for your M60 series tank is in plain sight on pages 2-152 and 2-153, TM 9-2350-215-10 (Feb 65). And that means no changes in the way to do it.

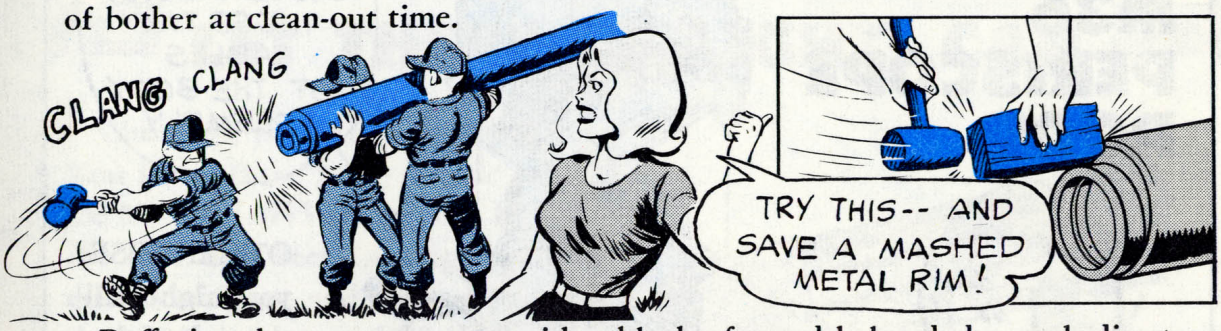


F'rinstance . . . the TM tells you to make sure the bolt assembly's forward — in battery — before you load the ammo. That way the feed lever inside the cover will fit into the groove of the feed cam on the feed and ejector assembly when you close the cover.

If the bolt's to the rear and then you do everything you're supposed to do, you're asking for trouble 'cause the feed lever and cam don't mate. That means bent or chipped ejector prongs.

SOFT MUSIC PLEASE!

Hung-up bore evacuators on 105 MM guns in M60-series tanks can be a batch of bother at clean-out time.



Buffering the evacuator case with a block of wood helps dodge such disaster, but only use it when taking the case off — not in putting it back. If it won't go back, find out why — no substituting a hammer for correct fit.

Besides, trouble likely won't come in the first place if you've kept cozy with LO 9-2350-215-12 (12 Aug 65) and made sure the threads all got the right grease coat.

M60A1 TANK BRAKE TIP

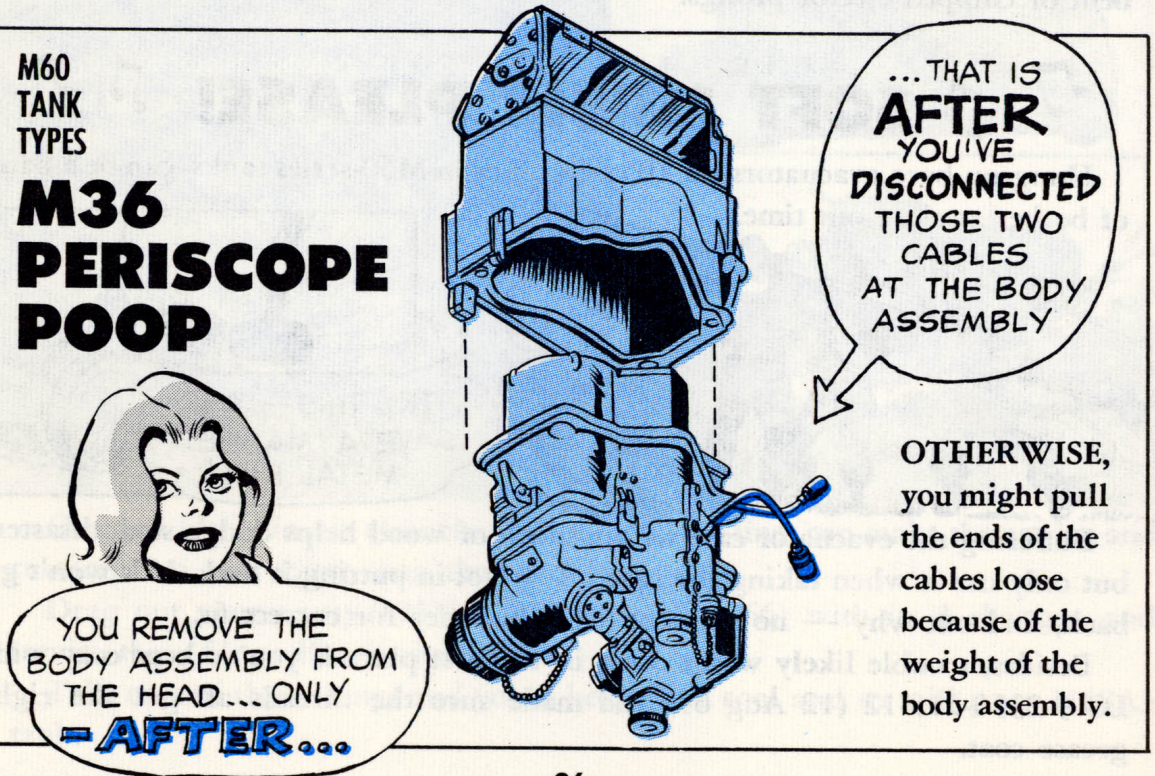
When you install slave cylinders in your M60A1 tank, do it the easy way.

Before removing the slave cylinders, make sure the parking brakes are in the locked position. With the parking brake locked, you're not so likely to damage the inserts and spring inside the cylinder housing during replacement.

The rest of the word is spelled out in Fig 2.141 in TM 9-2350-215-20 (Feb 65), Ch 1 (Apr 66).

M60 TANK TYPES

M36 PERISCOPE POOP



OTHERWISE, you might pull the ends of the cables loose because of the weight of the body assembly.

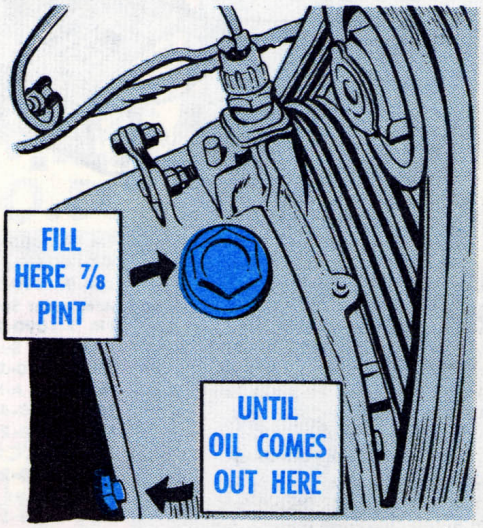
M110 HOWITZER:

LUBE NOTE

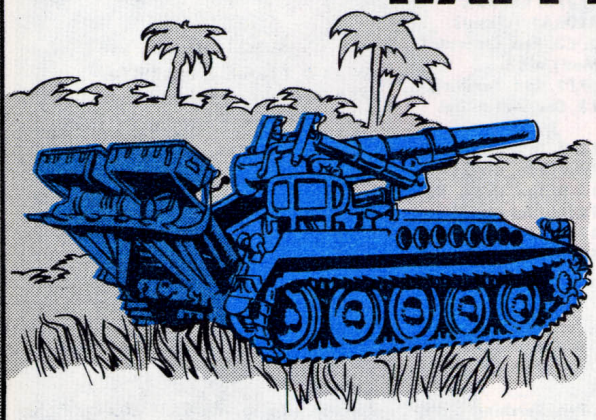
If you put too much oil in the magnetic clutch housing of your M110 howitzer you may blow the seal.

It just takes 7/8 pint of lube to fill the clutch housing to the right level — which is to the level plug at the end of the housing.

This will leave more room for the oil to expand and you are less likely to blow the seal in the rear of the housing.



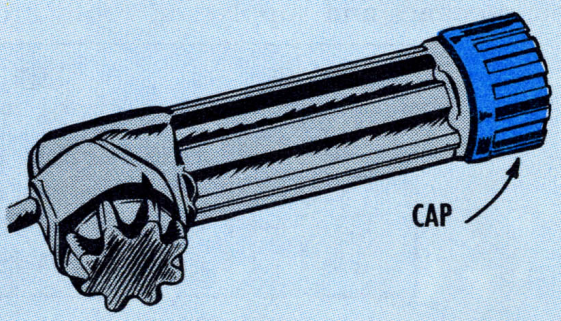
HAPPENING

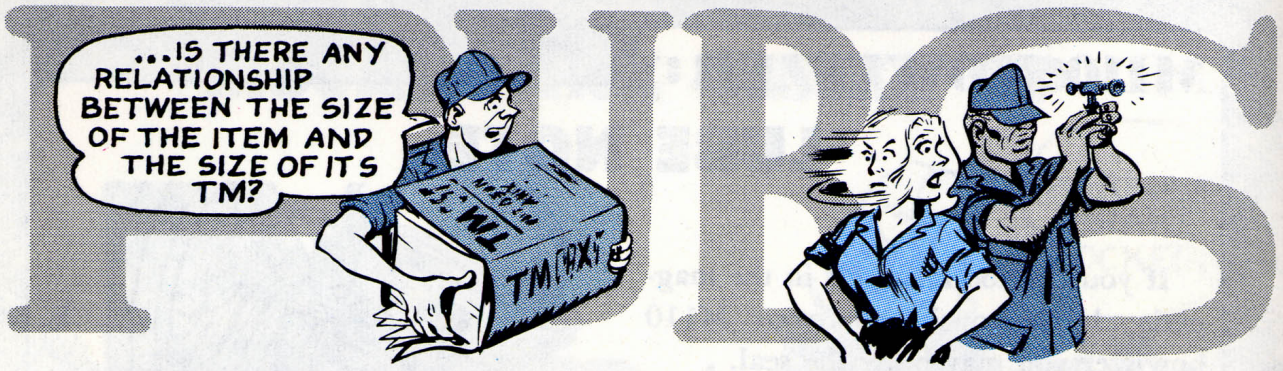


Looking for the FSN to order a spade stowage box for your M110 SP howitzer? Stop looking. There's no FSN but you can get the box anyway. The nomenclature is spade stowage box, P/N 10904364. Use the exception request per para 3-20.1 of AR 725-50 and explain in writing why you need the part.

LET THERE BE LIGHT, CAP

Cheer up, you M102 howitzer guys. You know those pesky plastic caps on the M52 and M53 instrument lights — the caps that keep busting when you do a lot of firing, and you have to throw the whole light away? Well, next time it busts, replace it with another cap . . . Cap, Instrument Light, M52 or M53 . . . FSN 1290-015-8543. Cite your howitzer's TM 9-1015-234-12 as authority.





This is a selected list of recent pubs of interest to organizational maintenance personnel. The list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4, Ch 3 (Oct 67), TM's, TB's, etc.; DA Pam 310-6 (Jul 67) and Ch 2 (Jan 68), SC's and SM's; DA Pam 310-7 (Jul 67), MWO's.

TECHNICAL MANUALS

TM 1-OV1-S, Feb, OV-1.
TM 3-220, Nov, CBR Decontamination.
TM 5-700, Jul, Field Water Supply.
TM 5-2805-208-14, Aug 65, Eng Gas Mil Std Mod (1A08-111), 1½ HP, FSN 2805-068-7510 (2A016-111), 3 HP, FSN 2805-072-4871. Available for issue, some dues-out inadvertently cancelled. Reorder on DA Form 17.
TM 5-3805-244-10, Jan, Dump Truck, 20 Ton, 4X2 DED, 15 Cu Yd.
TM 5-3805-245-15, Dec, Scoop Type Loader, DED, 4 Whl, 2½ Cu Yd.
TM 5-4110-212-15, Dec, Refrig Unit, Mech, 10,000 BTU, GED.
TM 5-4110-221-15, Dec, Refrig Unit, 5,000 BTU.
TM 5-6115-341-15, C1, Feb, Electrical, Gen Equip, .4 KW.
TM 5-6115-357-15, Dec, Gen Set, Diesel Eng, Whl Mtd, 15 KW, 400 Hertz AC, 3-Ph, 4 Wire, 120/208 V.
TM 5-6115-357-20P, Dec, Gen Set, Diesel, Whl Mtd, 15 KW, 400 Hertz AC, 3-Ph, 4 Wire, 120/208 V.
TM 5-6115-403-12, Dec, Gen Set, Gas Turbine Eng, AC, 15 KW, 400 Cy.
TM 9-1005-223-20, C2, Feb, M14, M14A1 Rifle.
TM 9-1090-203-12, Dec, TAT-102A, Armament Subsystem.
TM 9-1090-203-ESC, Dec, TAT-102A, Armament Subsystem.
TM 9-1300-203, C5, Feb, Ammo-anti-tank Field Artillery.
TM 9-1400-425-12P, Jan, Redeye.
TM 9-1430-250-15P/4/1, Dec, Nike-Herc.
TM 9-1430-250-15P/5/1, Dec, Nike-Herc.
TM 9-1430-512-15P/1, Dec, Hawk.
TM 9-1440-250-15P/1/1, Jan, Nike-Herc.
TM 9-2300-224-ESC/8, C2, Jan, M577A1 Carrier.
TM 9-2300-224-10/3/3, C2, Jan, SP, M106 (gas), M106A1 (diesel).
TM 9-2320-222-10, C3, Feb, Operator Recovery Vehicle (Med) M88.
TM 9-8140-375-15P/2, Jan, Pershing
TM 10-1670-205-13, Dec, Aerial Del Equip.
TM 55-1100-205-12-2, Jan, CH-34.
TM 55-1100-205-12-4, Jan, CH-21.
TM 55-1100-205-12-8, Jan, U-6A.
TM 55-1100-205-12-10, Jan, U-1A.
TM 55-1100-205-12-12, Jan, CH-37.
TM 55-1100-205-12-14, Jan, UH-1.

MODIFICATION WORK ORDERS

55-1520-214-30/18, Feb, Modify lower control bracket assy on OH-6A Helicopter, URGENT.
9-1190-233-20/3, Feb, Pershing.
9-2300-224-30/29, Feb, SP, M106 (Gas), M106A1 (Diesel).
9-2300-382-20, Jan, M60, M60A1, M48A3, M67A2, M728 Tanks.
55-1500-200-20/6 Feb, UH-1C-1D.
55-1500-202-30/1, Feb, UH-1A-1B-1C-1D, AH-1G.

TECHNICAL BULLETINS

TB 55-1500-206-20/6, Feb, UH-1A-1B-1C-1D, AH-1G.
TB 55-1500-206-20/10, Feb, UH-1A-1B-1C-1D, AH-1G.
TB 55-1510-209-20/3, Feb, U-21.
TB 55-1520-209-20/24, Mar, CH-47.
TB 55-1520-209-30/9, Feb, CH-47.
TB 55-1730-211-20/1, Feb, UH-1D.
TB 55-2800-200-30/2, Feb, CH-47.

MISCELLANEOUS

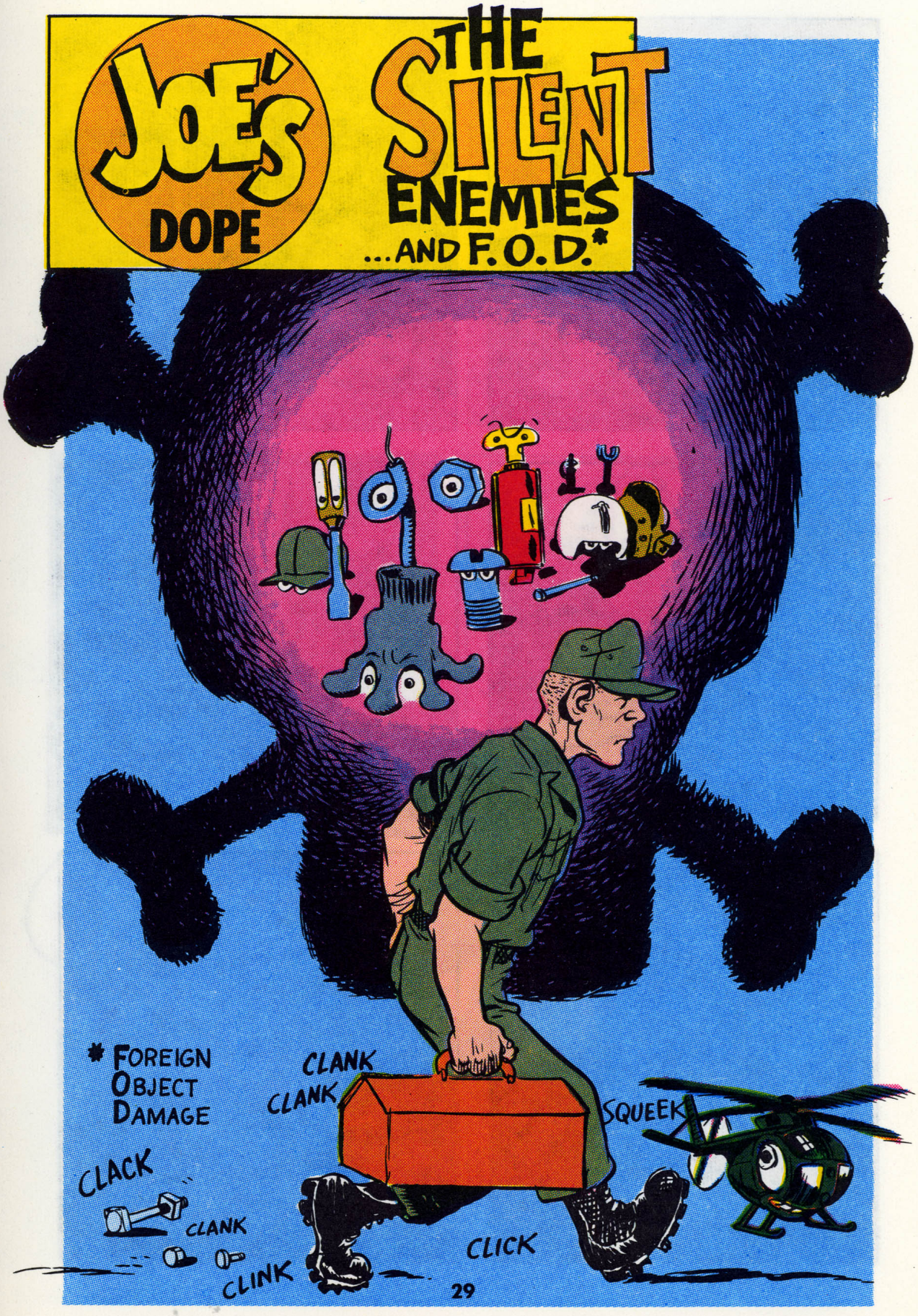
FM 23-9, C1, Feb, M16A1 Rifle.
LO 5-2330-220-12, Jan, Transporter, 32,000 lb.
LO 5-4930-217-12, Jan, Lube-Svc Unit, Trailer Mtd, 23 CFM Comp, Gas Driven, Elliott Mach, Mod ENG-3.
LO 5-6115-357-12, Jan, Gen Set, Diesel, Whl Mtd, 15 KW, 400 Hertz AC, 3-Ph, 4 Wire, 120/208 V.
LO 9-1090-203-12, Jan, TAT-102A, Armament Subsystem.
SC 3990-97-CL-E04, Nov, Heavy Lift Cargo Set.
SC 4220-97-CL-E04, Dec, Life Preserver Set, Vest Mark II.
SC 5850-91-CL-L04, Dec, Maint Kit, Electronic Equip, MK-953/UAS-4A.

NEW TRAINING AIDS

New Training Aids have just hit your local audio-visual center. They're on maintenance and supply and could prove real handy. Here they are:

SLIDE NO.	USED WITH
T38-11-1 (49 slides)	DA Pam 350-21-1 Organizational Supply
T38-11-2 (10 slides)	DA Pam 350-22-1 DS Supply
T38-11-3 (28 slides)	DA Pam 350-23 Commanders' Maintenance
T38-11-4 (7 slides)	DA Pam 350-26-1 M151 Mechanic
T38-11-5 (5 slides)	DA Pam 350-32-1 M151 Driver

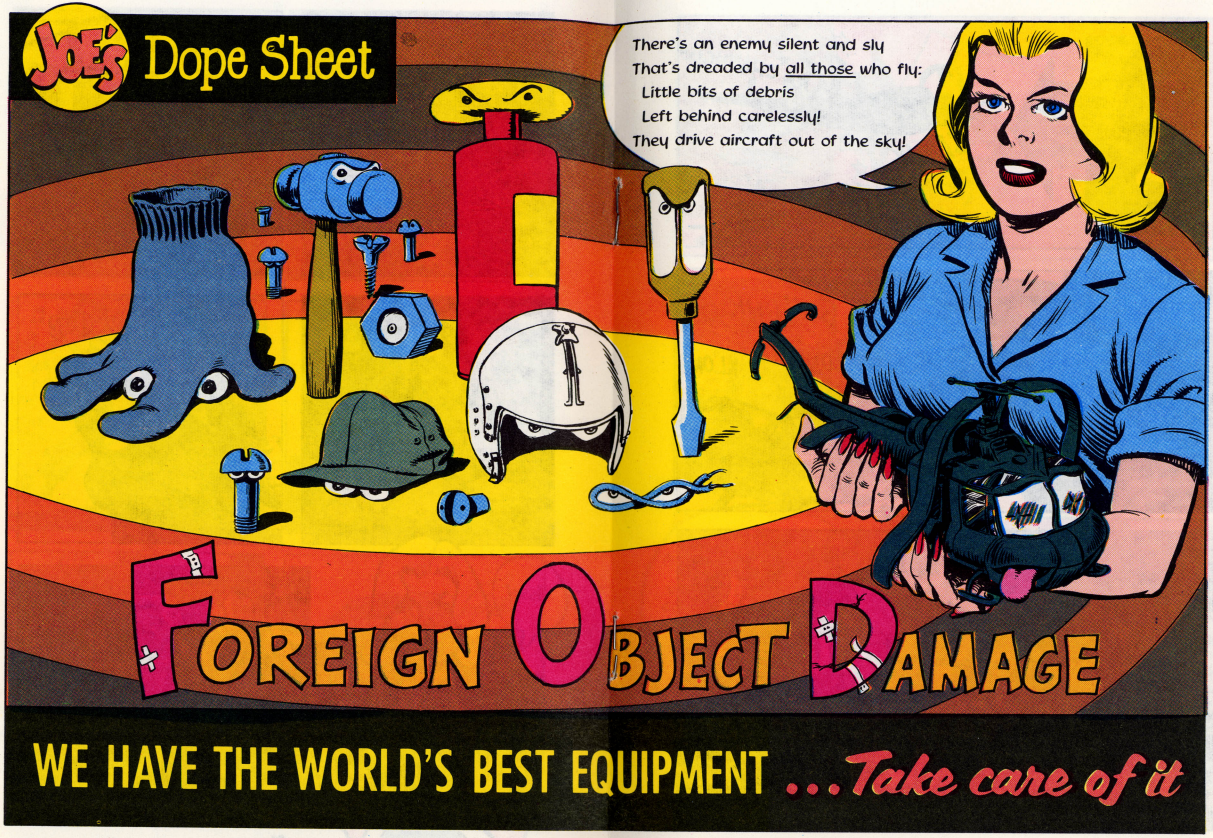
This material is in the form of vellum reproducibles which your audio-visual center uses to make Vu-Graph transparencies. Or the vellums can be used in opaque projectors.


JOE'S DOPE
THE SILENT ENEMIES ...AND F.O.D.*
* FOREIGN OBJECT DAMAGE
CLANK
CLANK
SQUEEK
CLACK
CLANK
CLINK
CLICK

CRANCH
SKREEK
KLONK
CLANK
CLUNK
CLAK
CLAK
CLACK
ACK
CLAK
TIK
TICK
TICK
SNIP
SNIP
PLAAHP
SLAP
SLAP
JDIVE
CLANK

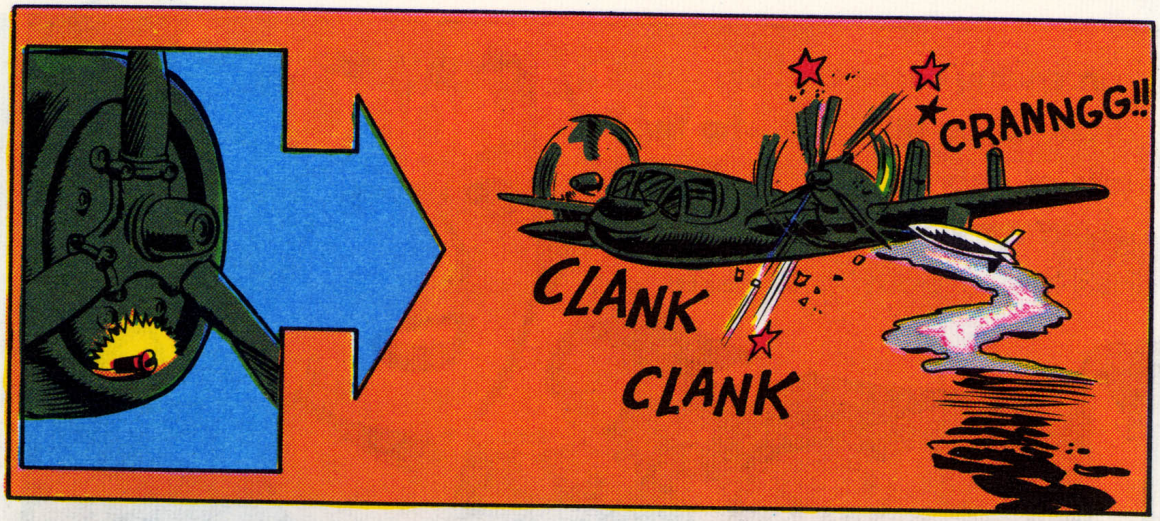
SKREEK
CLICK
CLAK
THUD
PLOP
BURP
HSST!
TAP TAP

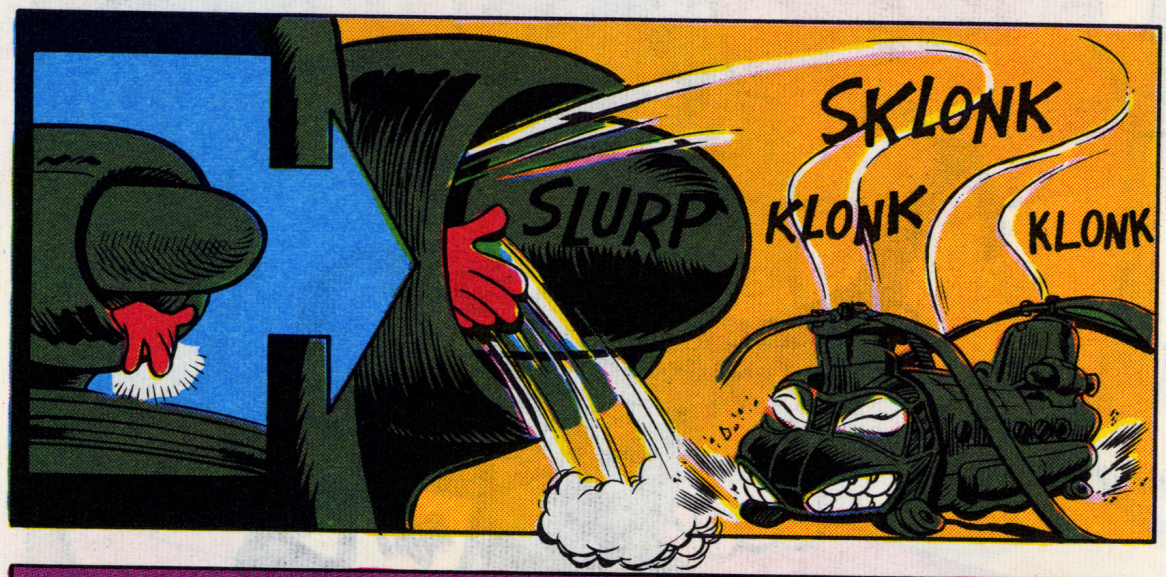
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLE

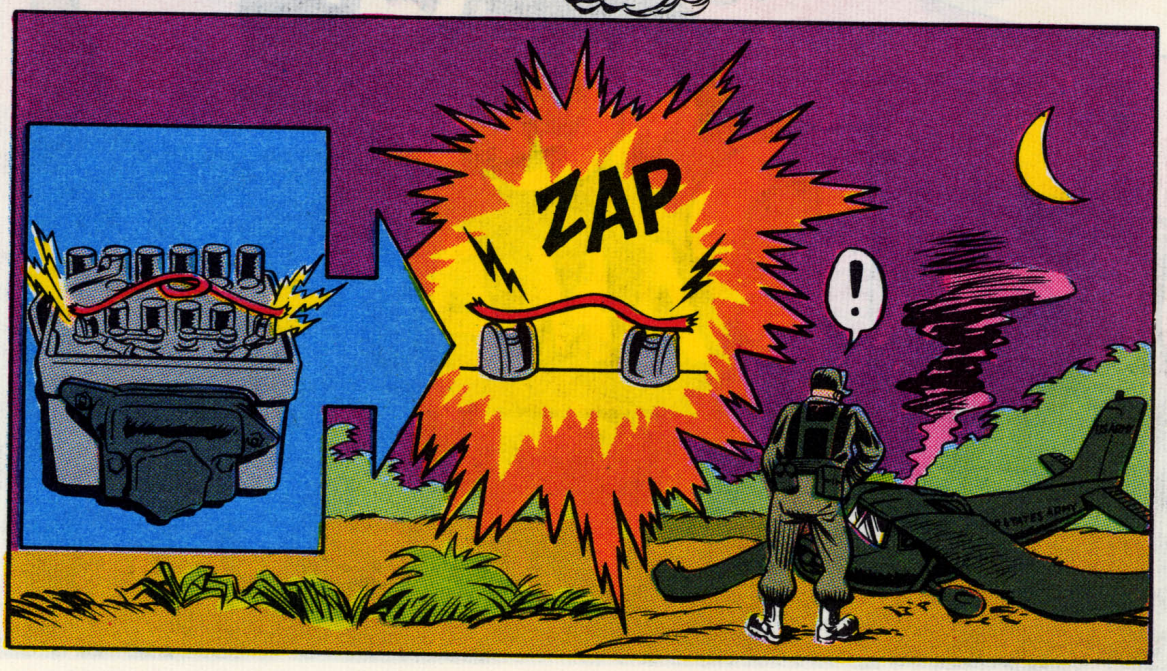


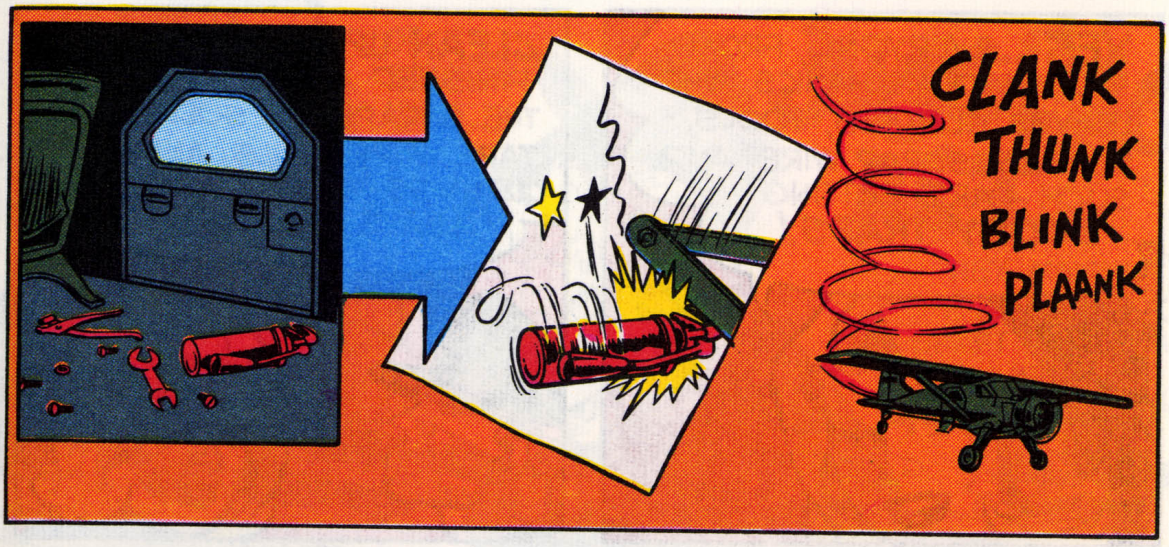
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

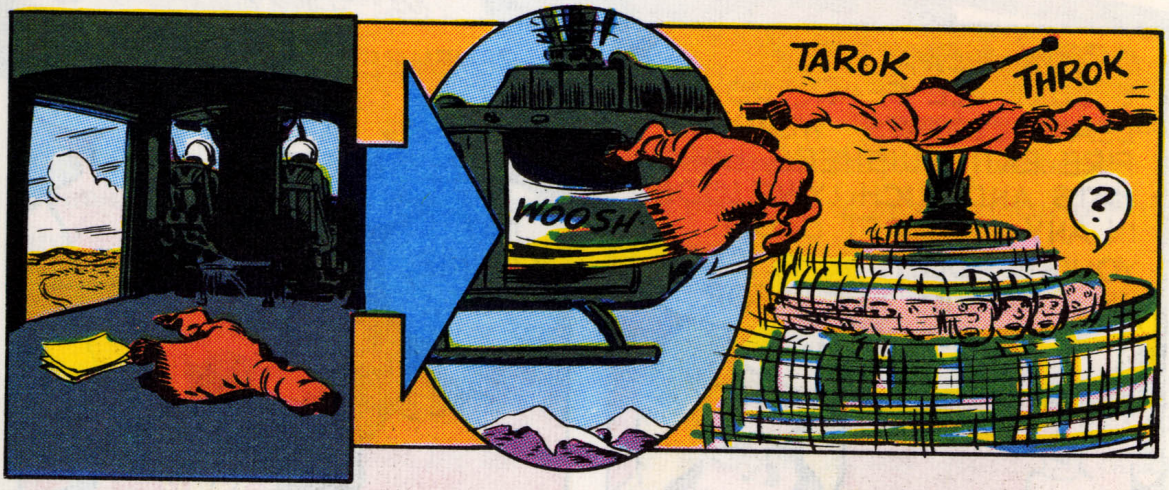
ETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

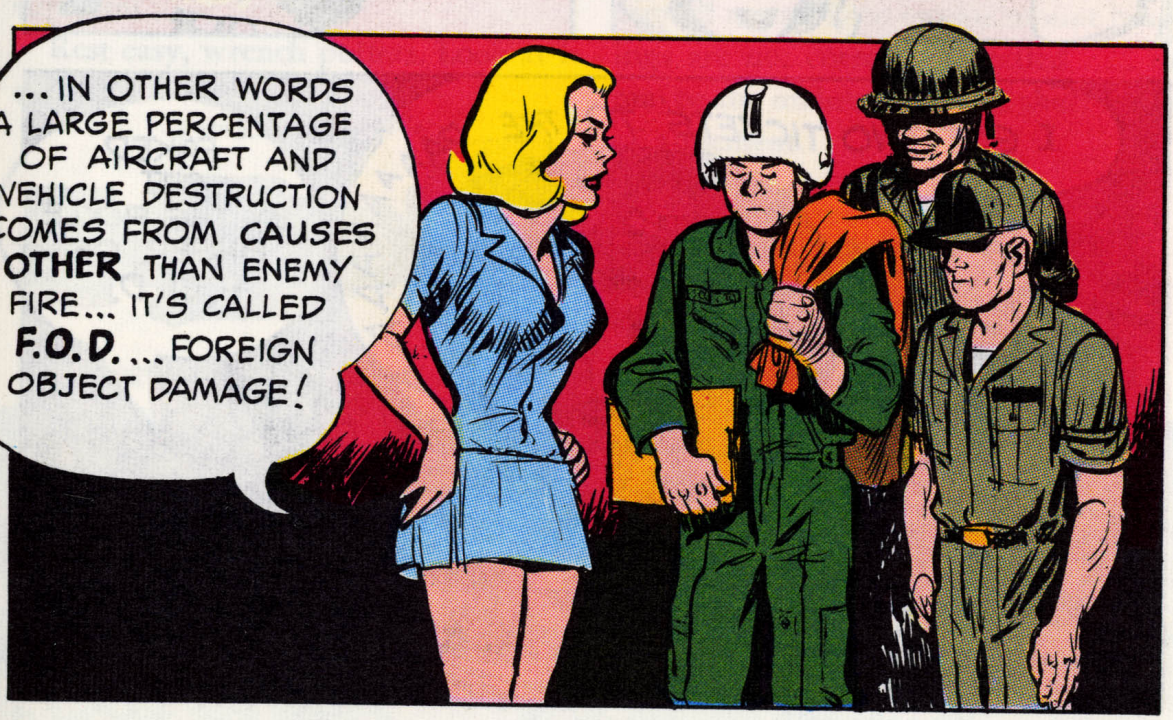

CRANNGG!!
CLANK
CLANK

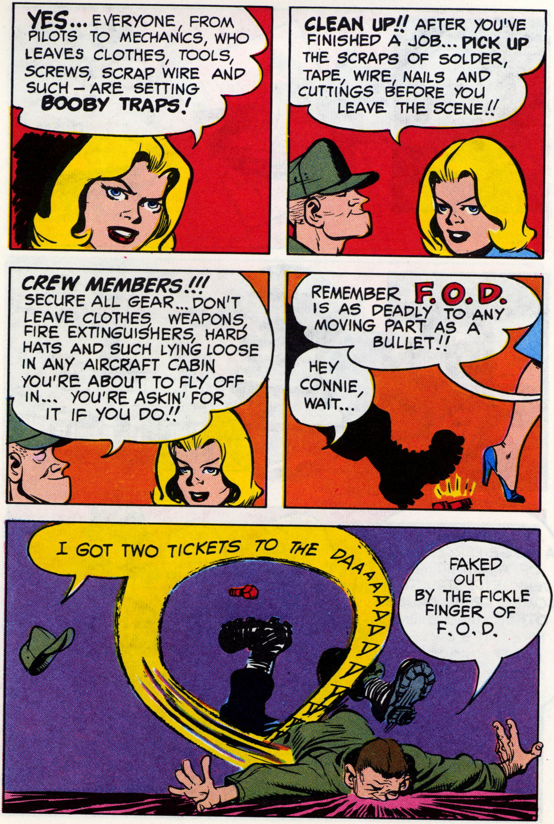

SLURP
SKLONK
KLONK
KLONK

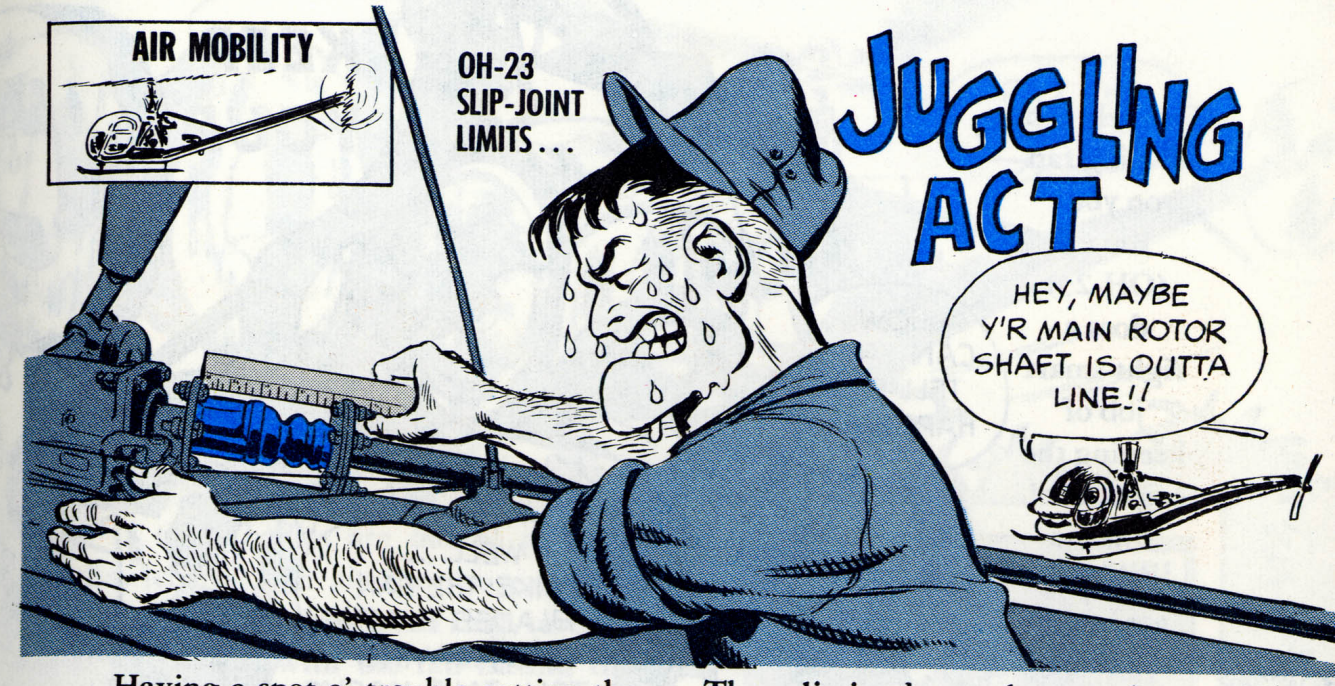

ZAP
!


CLANK
THUNK
BLINK
PLAANK


WOOSH
TAROK
THROK
?


...IN OTHER WORDS A LARGE PERCENTAGE OF AIRCRAFT AND VEHICLE DESTRUCTION COMES FROM CAUSES **OTHER** THAN ENEMY FIRE... IT'S CALLED **F.O.D.**...FOREIGN OBJECT DAMAGE!

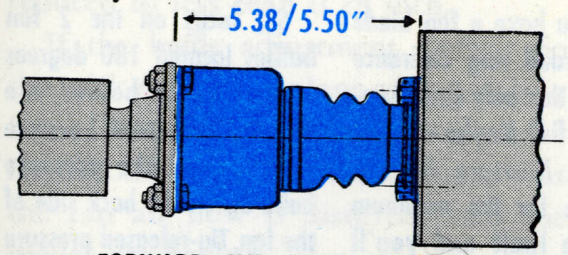

YES... EVERYONE, FROM PILOTS TO MECHANICS, WHO LEAVES CLOTHES, TOOLS, SCREWS, SCRAP WIRE AND SUCH – ARE SETTING BOOBY TRAPS!
CLEAN UP!! AFTER YOU'VE FINISHED A JOB... PICK UP THE SCRAPS OF SOLDER, TAPE, WIRE, NAILS AND CUTTINGS BEFORE YOU LEAVE THE SCENE!!
CREW MEMBERS!!! SECURE ALL GEAR... DON'T LEAVE CLOTHES, WEAPONS, FIRE EXTINGUISHERS, HARD HATS AND SUCH LYING LOOSE IN ANY AIRCRAFT CABIN YOU'RE ABOUT TO FLY OFF IN... YOU'RE ASKIN' FOR IT IF YOU DO!!
REMEMBER F.O.D. IS AS DEADLY TO ANY MOVING PART AS A BULLET!!
HEY CONNIE, WAIT...
I GOT TWO TICKETS TO THE DAAAAAAAAAAAAAA
FAKED OUT BY THE FICKLE FINGER OF F.O.D.



Having a spot o' trouble getting the fore and aft slip-joint adjustments within limits on your Raven model Armybird?

True, TM 55-1520-206-20 (Oct 65) spells out the min-max limits for both joints—5.38/5.50 inches catches the forward slip-joint settings and 5.55/5.80 inches marks the limits for the aft slip joint.

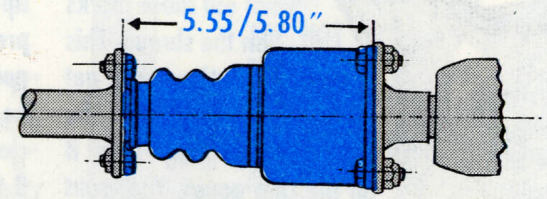
Rest easy, wrench pullers. Look at it this way.



FORWARD SLIP JOINT SETTING

These limits do not have to be met all way round the joint. Just be sure at least one point of measurement is within specified limits.

If you do the slip-joint gymnastics noted in para 7-33b of the -20 and still can't make those min-max limits, better war whoop support for help. Could be the isolation mount spacers or outer gimbol assembly to engine mount bearings are not correctly installed . . . or maybe the main rotor drive shaft is out of alinement.



AFT SLIP JOINT SETTING

INSPECTION TB

You air types getting a full 100 hours of flying time on your birds between Preventive Maintenance Periodic checks? You should be! Under normal conditions you can pull intermediates a few hours early without throwing your schedule out of whack. Read all about it in TB 55-1500-301-25 (23 Oct 67) . . . takes the place of TB AVN 23-67.

KEEP YOUR

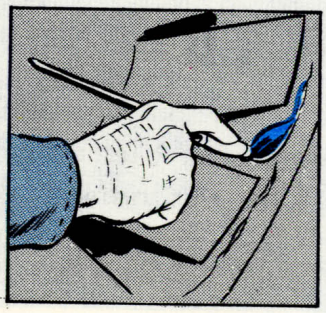
That whirling cooling fan on your Raven (OH-23) does a right-smart job of keeping the engine cool. But the fan can get out of whack and make your bird hot under the collar!!

HOW CAN YA TELL IT'S HAPPENING?

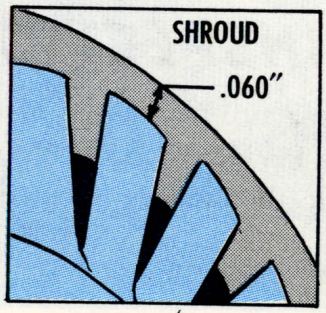
WELL... LIKE THE FAN BLADES HIT THE RING, LEAVING TELL-TALE MARKS ON THE SHROUD!!

IT'LL PAY YOU TO CHECK YOUR SITUATION OUT!!

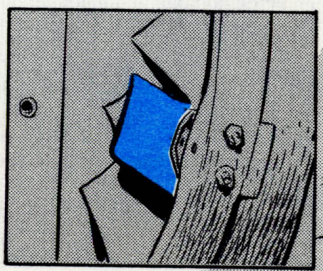
You could paint out those marks on the shroud. This temporary solution might get you past a CMMI but the shroud would only take it on the chin again. You want a permanent fix.



Do you have a fan blade tip-to-shroud ring clearance problem that only direct support can fix? Maybe — maybe not! Measure the tip clearance for the minimum 0.060-in limit and you'll probably find it's OK.

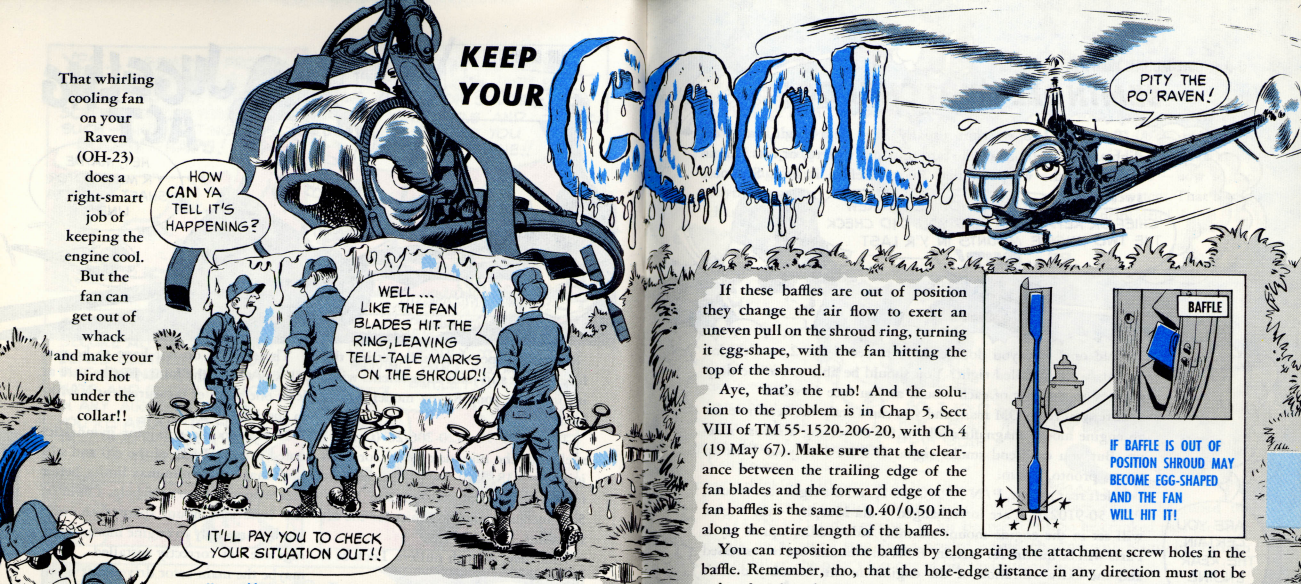


So, focus on the 2 fan baffles located 180 degrees apart. These babies are mighty important because they unload the pressure build-up on the back side of the fan. Un-released pressure could turn the fan into a pretzel.



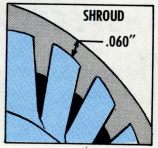
KEEP YOUR COOL

That whirling cooling fan on your Raven (OH-23) does a right-smart job of keeping the engine cool. But the fan can get out of whack and make your bird hot under the collar!!

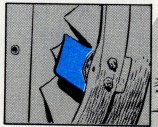


You could paint out those marks on the shroud. This temporary solution might get you past a CMMI but the shroud would only take it on the chin again. You want a permanent fix.

Do you have a fan blade tip-to-shroud ring clearance problem that only direct support can fix? Maybe — maybe not! Measure the tip clearance for the minimum 0.060-in limit and you'll probably find it's OK.



So, focus on the 2 fan baffles located 180 degrees apart. These babies are mighty important because they unload the pressure build-up on the back side of the fan. Un-released pressure could turn the fan into a pretzel.



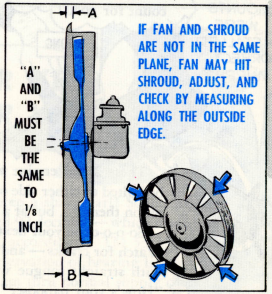
If these baffles are out of position they change the air flow to exert an uneven pull on the shroud ring, turning it egg-shape, with the fan hitting the top of the shroud.

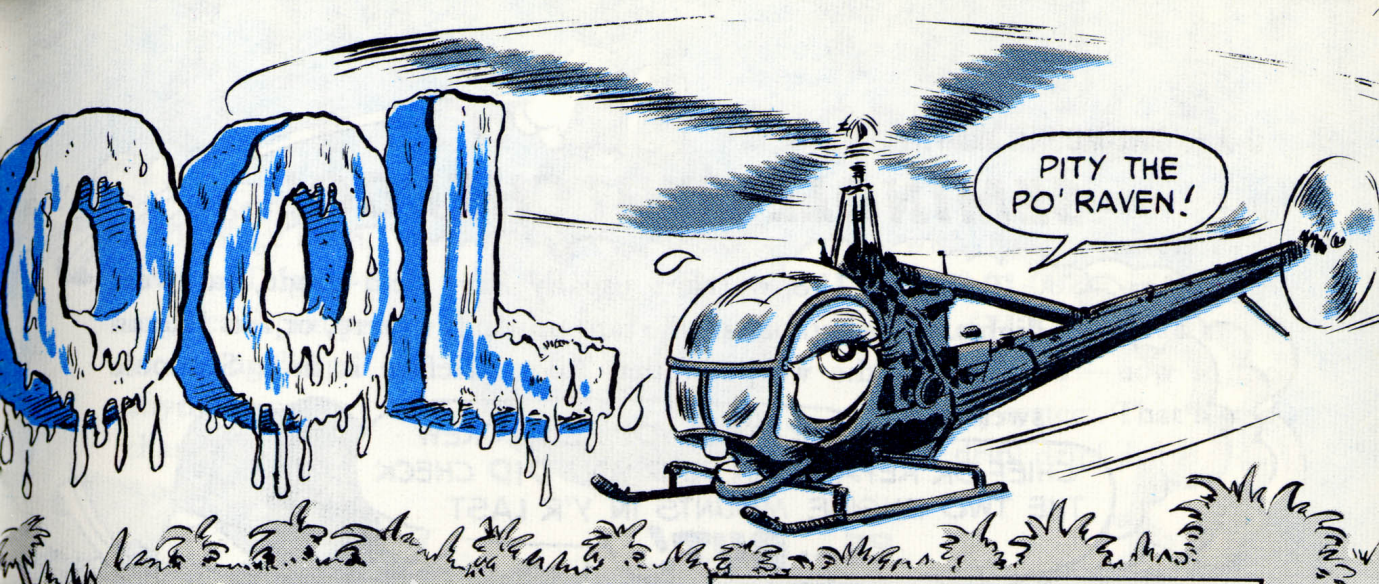
Aye, that's the rub! And the solution to the problem is in Chap 5, Sect VIII of TM 55-1520-206-20, with Ch 4 (19 May 67). **Make sure** that the clearance between the trailing edge of the fan blades and the forward edge of the fan baffles is the same — 0.40/0.50 inch along the entire length of the baffles.

You can reposition the baffles by elongating the attachment screw holes in the baffle. Remember, tho, that the hole-edge distance in any direction must not be reduced to less than 0.28 inch.

If the baffle adjustment doesn't do the trick maybe the plane of the cooling fan is not parallel with the plane of the fan shroud ring? This would mean that the fan air flow is disturbed and the blades are flexing.

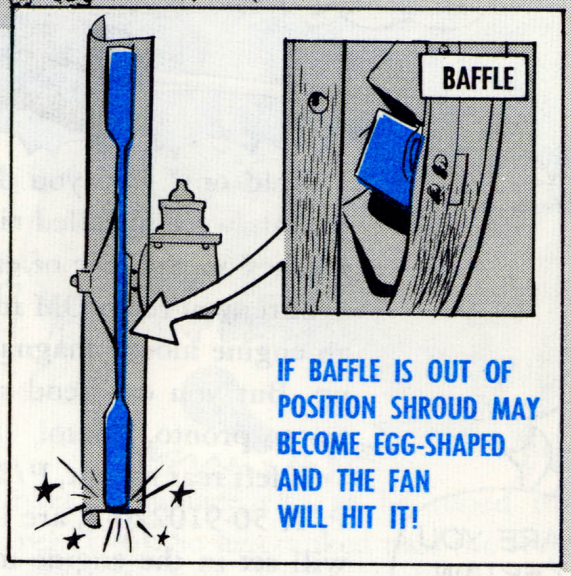
Get rid of this condition by adjusting the cooling fan shroud ring so that the plane of the ring and the plane of the fan are parallel within 1/8 inch. Make your measurements from the leading edge of the fan blade to the forward face of the ring at four equally spaced points around the ring.





If these baffles are out of position they change the air flow to exert an uneven pull on the shroud ring, turning it egg-shape, with the fan hitting the top of the shroud.

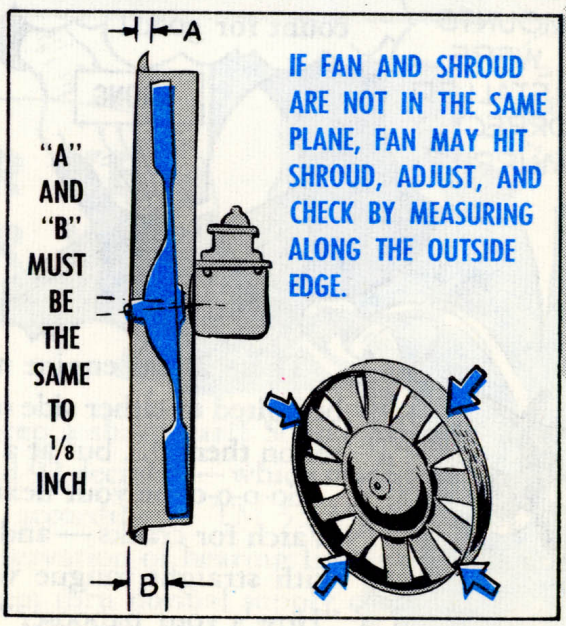
Aye, that's the rub! And the solution to the problem is in Chap 5, Sect VIII of TM 55-1520-206-20, with Ch 4 (19 May 67). **Make sure** that the clearance between the trailing edge of the fan blades and the forward edge of the fan baffles is the same—0.40/0.50 inch along the entire length of the baffles.



You can reposition the baffles by elongating the attachment screw holes in the baffle. Remember, tho, that the hole-edge distance in any direction must not be reduced to less than 0.28 inch.

If the baffle adjustment doesn't do the trick maybe the plane of the cooling fan is not parallel with the plane of the fan shroud ring? This would mean that the fan air flow is disturbed and the blades are flexing.

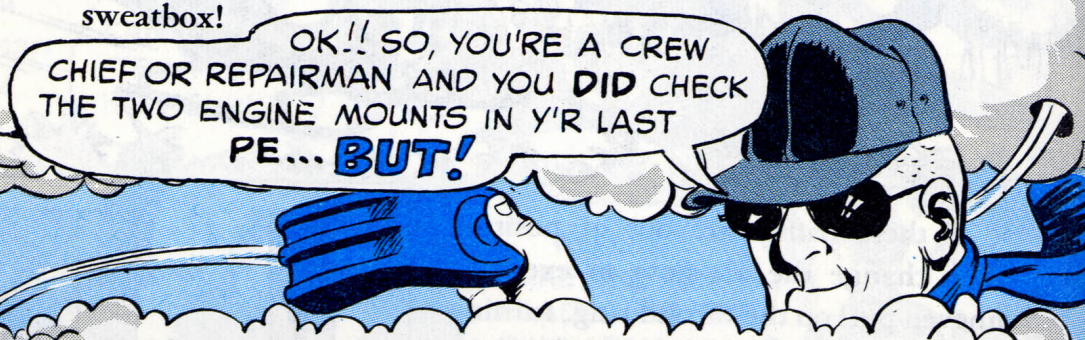
Get rid of this condition by adjusting the cooling fan shroud ring so that the plane of the ring and the plane of the fan are parallel within ⅛ inch. Make your measurements from the leading edge of the fan blade to the forward face of the ring at four equally spaced points around the ring.



U-8 ENGINE-MOUNT MURPHY . . .

SEMINOLE SWITCHEROO!

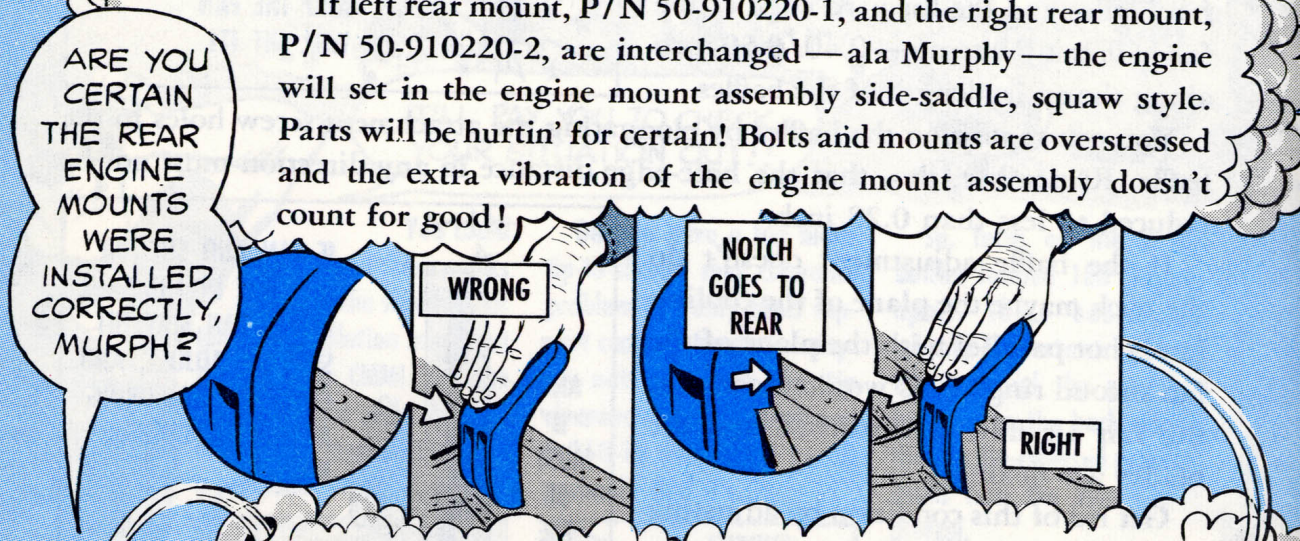
Twin fan U-8 warriors usually have field grade, no-sweat flights. It's when one of the fans unwinds to zero, or acts like an Indian on the warpath, that Pilot Paleface is in a Seminole sweatbox!



Hold one! Did you double-check to see if the 2 rear engine mounts were installed right? You should be able to see the deep notches on the rear of each mount as you face forward.

Sure, you're an OM man, and you can't scalp the Seminole for an engine mount magnaflux job, or for correcting a mount mix-up. But you can send smoke signal H-E-L-P! to your back-up troops pronto, Tonto!

If left rear mount, P/N 50-910220-1, and the right rear mount, P/N 50-910220-2, are interchanged—ala Murphy—the engine will set in the engine mount assembly side-saddle, squaw style. Parts will be hurtin' for certain! Bolts and mounts are overstressed and the extra vibration of the engine mount assembly doesn't count for good!



These 2 rear engine mounts are double-image items. They can be bolted to either side of the mount assembly and the engine will set on them . . . but at a no-good angle.

So-o-o-o, on your next Seminole PE, double-blink these mounts. Watch for cracks—and a mount switcheroo. Then you can speak with straight tongue when Indian TI, MO, or Big Chief asks, "How's your papoose?"

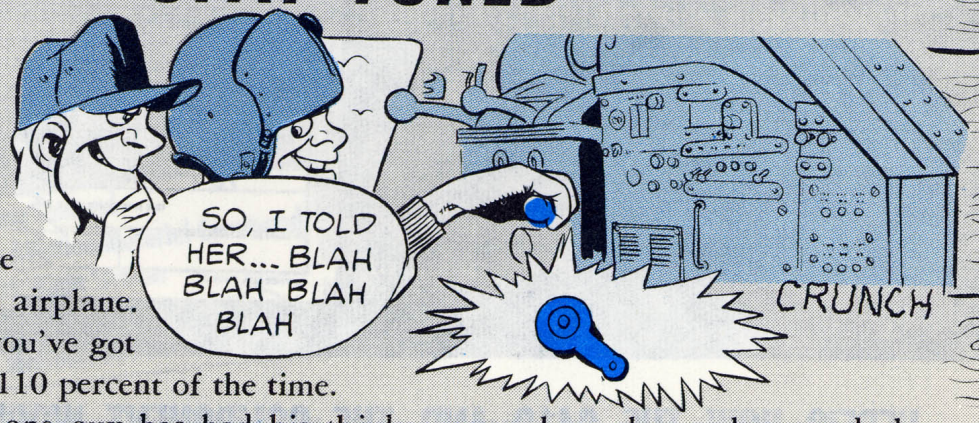
NEW LEAK STOPPER

You can stop oil leakage from the Bird Dog (O-1) engine oil-pump-mounting flange anytime a pump change is in the works.

Just mount the pump with flange gasket, P/N 5330-01-002-3, FSN 5330-851-5712, manufacturer's code 81996—now in the supply system. That'll stop the drip! drip! drip!

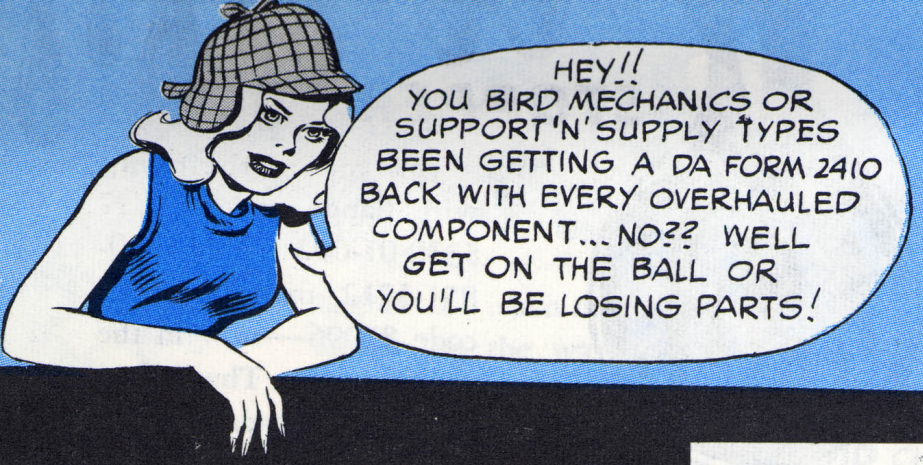
STAY TUNED

No doubt about it . . . you've got to have your wits about you when you're the chauffeur of an airplane. You know . . . you've got to be thinking 110 percent of the time.



But more'n one guy has had his thinker someplace else as he tuned the AN/ARN-30( ) radio receiver in his Beaver (U-6). So he cranked past the stop. Chalk up a busted stop and a needed repair job. And with his tuning thrown out of kilter, the pilot's lost one of his navigational aids.

Pilots, mechanics and passengers—keep a sharp ear!! Sound pressure levels in and around the Cayuse (OH-6A) exceed 92 decibles—which means you should be wearing protective hearing devices, according to TM 55-1520-214-10. TB MED 251 (25 Jan 65) on noise and conservation of hearing lists ear muffs and various size ear plugs by FSN . . . get 'em thru normal supply channels.



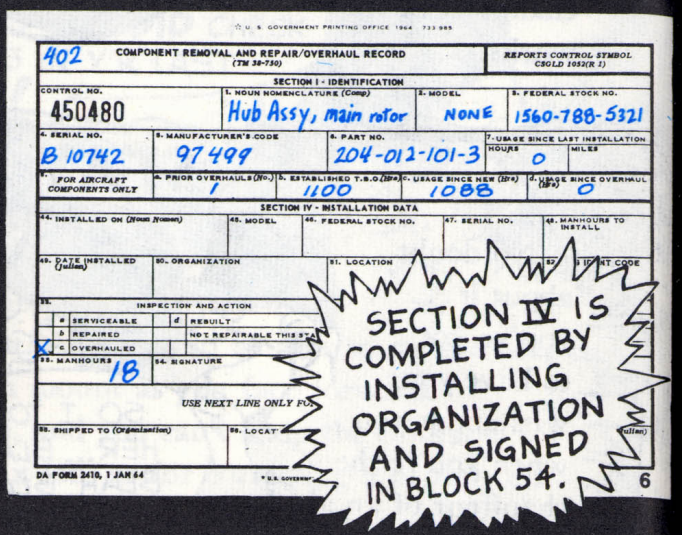
DA FORM 2410 INFO . . .

TRACK

SUPPORT

It's the responsibility of the first outfit receiving a newly-overhauled part to see that all the shipping paperwork, **including a completely filled-out 2410,** if required by TB AVN 23-65, is packed with the part. In most cases the first (intermediate) stop is a general or direct support outfit.

But, shipping containers do get busted up, and records can get torn up or lost.



☆ U. S. GOVERNMENT PRINTING OFFICE 1964 733 985

402 — COMPONENT REMOVAL AND REPAIR/OVERHAUL RECORD (TM 38-750) — REPORTS CONTROL SYMBOL CSGLD 1052(R 1)

SECTION I - IDENTIFICATION

1. CONTROL NO.	1. NOUN NOMENCLATURE (Comp)	2. MODEL	3. FEDERAL STOCK NO.
450480	Hub Assy, main rotor	NONE	1560-788-5321

4. SERIAL NO.	5. MANUFACTURER'S CODE	6. PART NO.	7. USAGE SINCE LAST INSTALLATION HOURS	MILES
B 10742	97499	204-012-101-3	0	

8. FOR AIRCRAFT COMPONENTS ONLY	a. PRIOR OVERHAULS (No.)	b. ESTABLISHED T.B.O. (Hrs.)	c. USAGE SINCE NEW (Hrs)	d. USAGE SINCE OVERHAUL (Hrs)
	1	1100	1088	0

SECTION IV - INSTALLATION DATA

44. INSTALLED ON (Hours) (Number)	45. MODEL	46. FEDERAL STOCK NO.	47. SERIAL NO.	48. MANHOURS TO INSTALL

49. DATE INSTALLED (Julian)	50. ORGANIZATION	51. LOCATION	52.

53. INSPECTION AND ACTION

a	SERVICEABLE	d	REBUILT
b	REPAIRED		NOT REPAIRABLE THIS STA
c	OVERHAULED		

55. MANHOURS 18 — 54. SIGNATURE

USE NEXT LINE ONLY FO

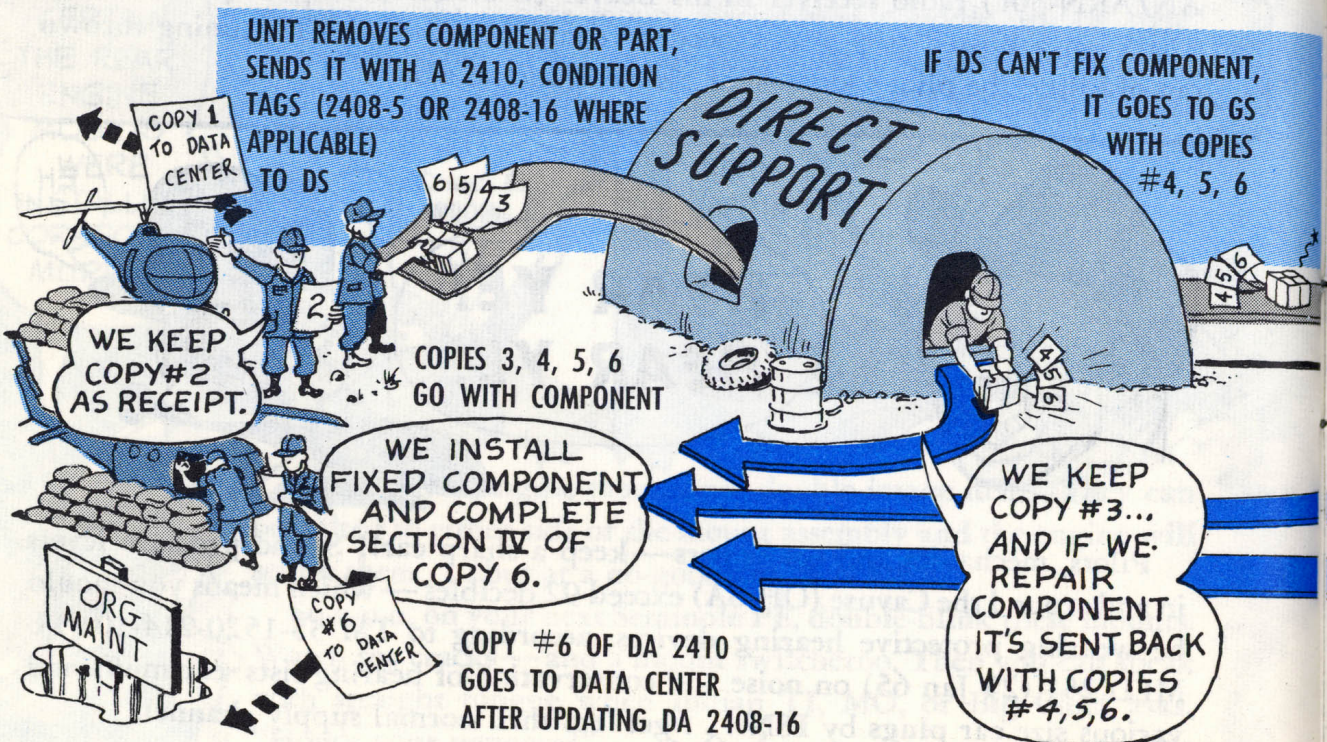
56. SHIPPED TO (Organization) — 58. LOCAT (Julian)

DA FORM 2410, 1 JAN 64 — * U.S. GOVERNMENT

SECTION IV IS COMPLETED BY INSTALLING ORGANIZATION AND SIGNED IN BLOCK 54.

6

HERE'S HOW THE 2410 AND THE COMPONENT WORK TOGETHER

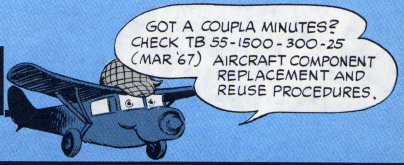


DA FORM 2410 INFO...

TRACK IT DOWN

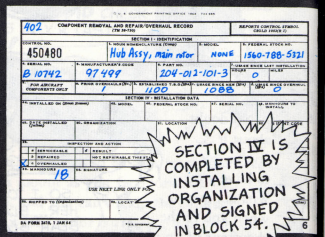
SUPPORT

TRACKING



It's the responsibility of the first outfit receiving a newly-overhauled part to see that all the shipping paperwork, **including a completely filled-out 2410,** if required by TB AVN 23-65, is packed with the part. In most cases the first (intermediate) stop is a general or direct support outfit.

But, shipping containers do get busted up, and records can get torn up or lost.



So, if the historical data didn't come with the part from the depot or manufacturer, you send up a smoke signal. Contact the overhaul outfit and get a completed 2410 or the poop that should go on it.

When you run into a roadblock and can't reconstitute the DA Form 2410, contact the Aviation Command for help at this address:

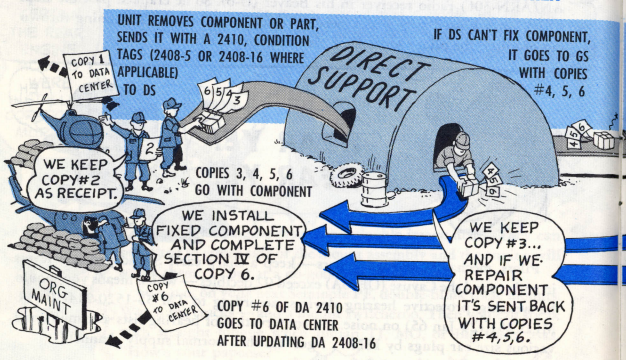
Commanding General
U. S. Army Aviation Materiel Command
PO Box 209, Main Station
ATTN: AMSAV-FMM
St. Louis, Missouri 63166

NEW ADDRESS

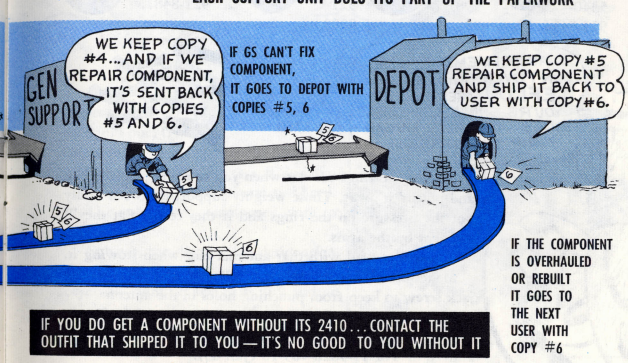
To help you get the missing component poop, the headshed needs a little something to go on . . . like all you can give 'em.

Make with the component nomenclature, FSN, part number and serial number. Also, if available, the DA Form 2410 preprinted control number, bird model, serial number and the designation of the last outfit that had the part helps to reconstitute the missing info.

HERE'S HOW THE 2410 AND THE COMPONENT WORK TOGETHER



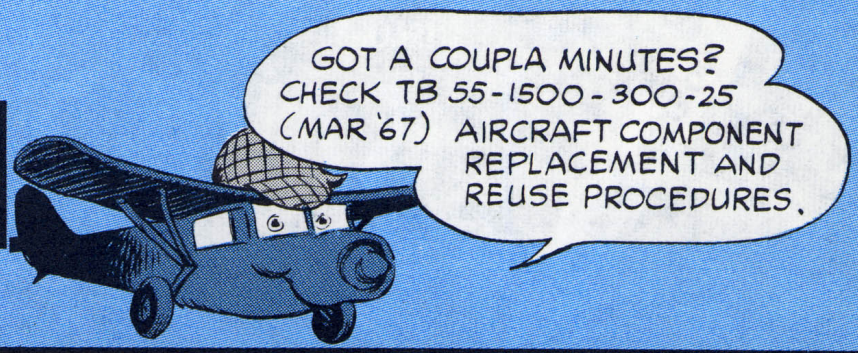
EACH SUPPORT UNIT DOES ITS PART OF THE PAPERWORK



IF YOU DO GET A COMPONENT WITHOUT ITS 2410... CONTACT THE OUTFIT THAT SHIPPED IT TO YOU — IT'S NO GOOD TO YOU WITHOUT IT

IT DOWN

TRACKING



So, if the historical data didn't come with the part from the depot or manufacturer, you send up a smoke signal. Contact the overhaul outfit and get a completed 2410 or the poop that should go on it.

When you run into a roadblock and can't reconstitute the DA Form 2410, contact the Aviation Command for help at this address:

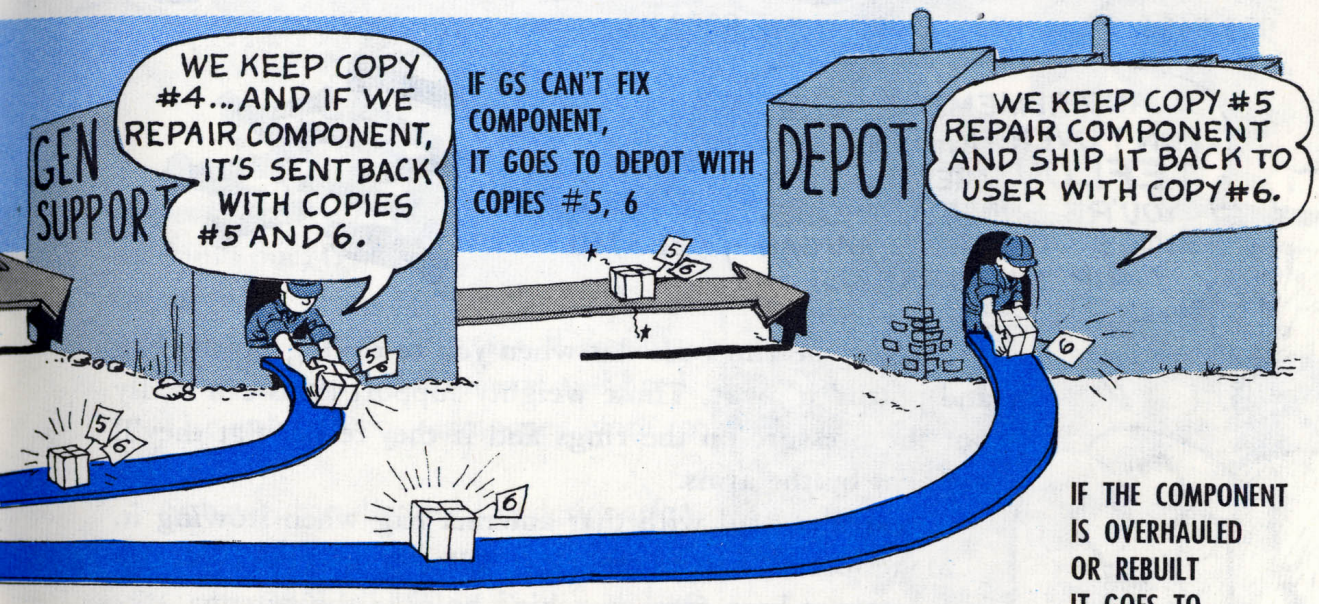
Commanding General
U. S. Army Aviation Materiel Command
PO Box 209, Main Station
ATTN: AMSAV-FMM
St. Louis, Missouri 63166

NEW ADDRESS

To help you get the missing component poop, the headshed needs a little something to go on . . . like all you can give 'em.

Make with the component nomenclature, FSN, part number and serial number. Also, if available, the DA Form 2410 preprinted control number, bird model, serial number and the designation of the last outfit that had the part helps to reconstitute the missing info.

EACH SUPPORT UNIT DOES ITS PART OF THE PAPERWORK



IF THE COMPONENT IS OVERHAULED OR REBUILT IT GOES TO THE NEXT USER WITH COPY #6

IF YOU DO GET A COMPONENT WITHOUT ITS 2410 . . . CONTACT THE OUTFIT THAT SHIPPED IT TO YOU — IT'S NO GOOD TO YOU WITHOUT IT

TRACK-80

SAVE THE RINGS

Burnt or bent feedhorn rings in the ol' parabolic antenna bag can sure deflate Pershing missile communications, quick-like.

So, take care of those costly AN/TRC-80 radio terminal set Teflon rings.

Like, when you're hooking up the feedhorn assembly to the antenna be sure rain, snow, dirt, dust or anything else doesn't get in the rings' recesses. 'Cause any of these alien items can cause ring burns and leave 'em about as useful as a sponger in the hands of Mrs. Noah.

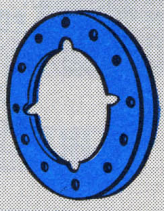
Then, to get that bag back in the antenna business you'll have to replace the

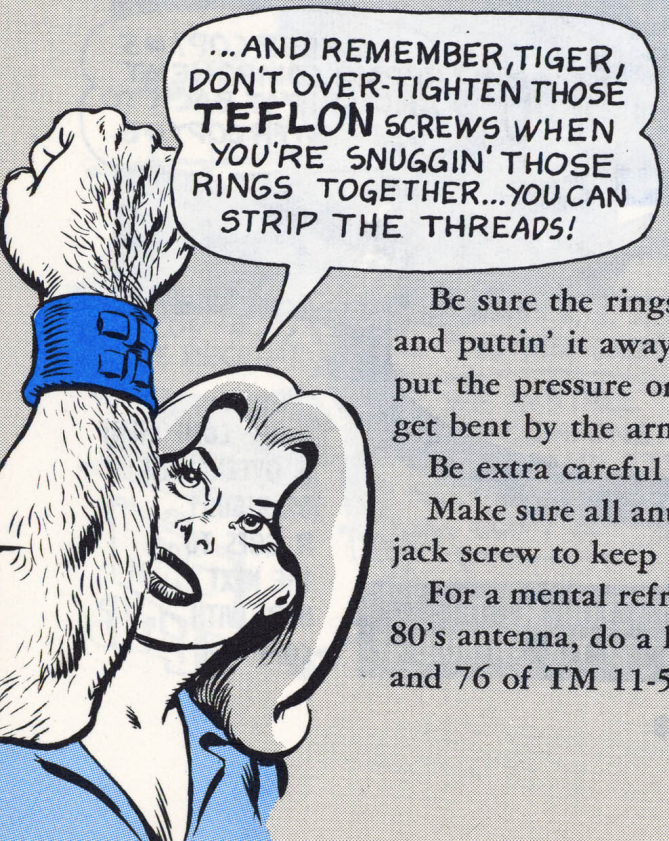
middle spacer ring, FSN 5340-921-8484,

inside clamp ring, FSN 5985-921-3699,

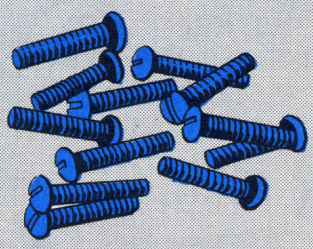
Teflon sheet, FSN 5340-921-8293,

or the notched top ring, FSN 6340-921-8487.





And, 12 Teflon screws, FSN 5305-921-5760.



Be sure the rings are flat when you're rolling up the bag and puttin' it away. Those weighty support arms can really put the pressure on the rings and if they're not flat they'll get bent by the arms.

Be extra careful with that antenna bag when stowing it.

Make sure all antenna fabric is rolled behind the elevation jack screw to keep from punching holes in the antenna.

For a mental refresher on the ups and downs of the Track-80's antenna, do a little eyeballing of Change 3 and para 57 and 76 of TM 11-5820-469-10 (Jan 63).

SAVE THE RINGS ...AND BAG

Burnt or bent feedhorn rings in the ol' parabolic antenna bag can sure deflate Pershing missile communications, quick-like.

So, take care of those costly AN/TRC-80 radio terminal set Teflon rings.

Like, when you're hooking up the feedhorn assembly to the antenna be sure rain, snow, dirt, dust or anything else doesn't get in the rings' recesses. 'Cause any of these alien items can cause ring burns and leave 'em about as useful as a sponger in the hands of Mrs. Noah.

Then, to get that bag back in the antenna business you'll have to replace the middle spacer ring, FSN 5340-921-8484,

inside clamp ring, FSN 5985-921-3699,

Teflon sheet, FSN 5340-921-8293,

or the notched top ring, FSN 6340-921-8487.

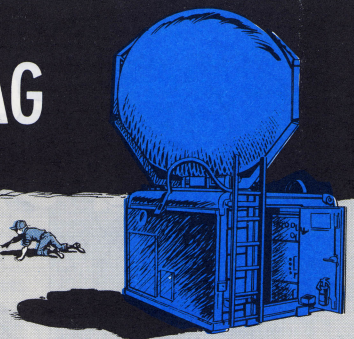
And, 12 Teflon screws, FSN 5305-921-5760.

Be sure the rings are flat when you're rolling up the bag and puttin' it away. Those weighty support arms can really put the pressure on the rings and if they're not flat they'll get bent by the arms.

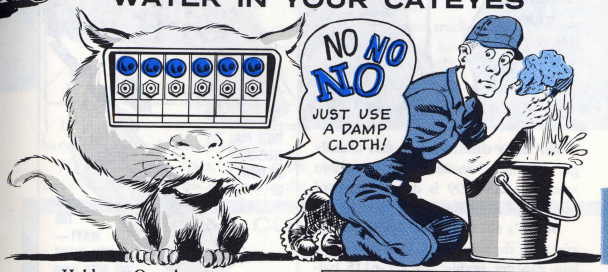
Be extra careful with that antenna bag when stowing it.

Make sure all antenna fabric is rolled behind the elevation jack screw to keep from punching holes in the antenna.

For a mental refresher on the ups and downs of the Track-80's antenna, do a little eyeballing of Change 3 and para 57 and 76 of TM 11-5820-469-10 (Jan 63).



WATER IN YOUR CATEYES

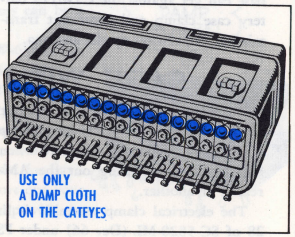


Hold one, Owen!

If you're about to clean the SB-22()/PT switchboard's cateyes and designation strips, back off a minute and heed.

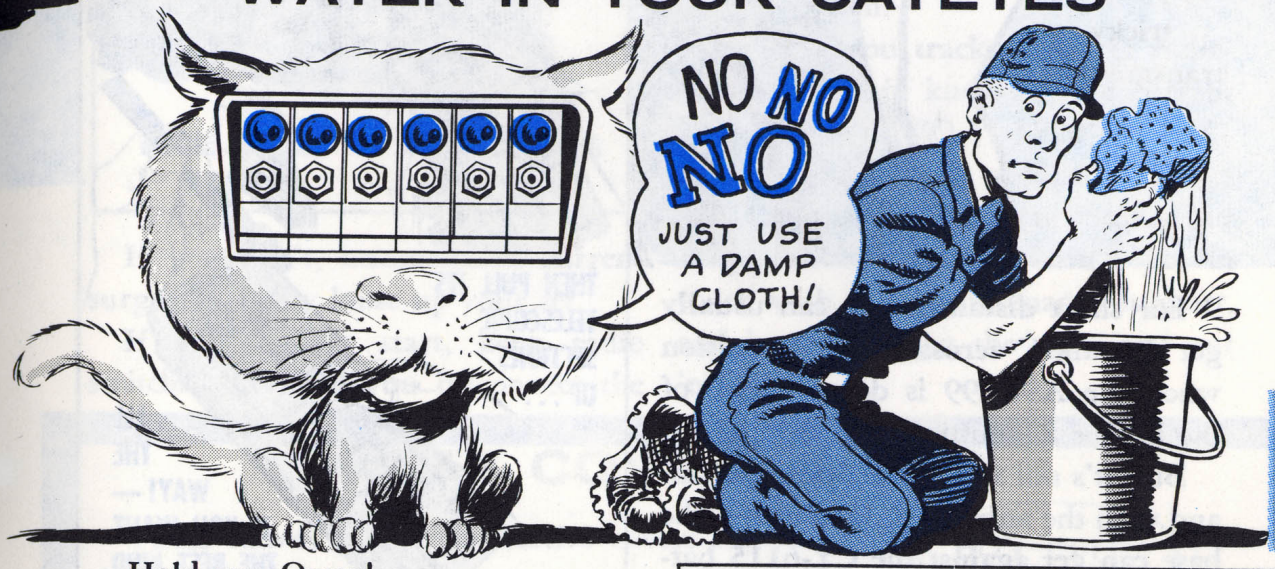
Use only a water-dampened cloth to do the job.

Solvents can discolor the designation strips, and rub the luminous-painted eyeballs right off the balls . . . and at night, especially, it would be mighty hard to tell if they're rolling around for you.



...AND BAG

WATER IN YOUR CATEYES

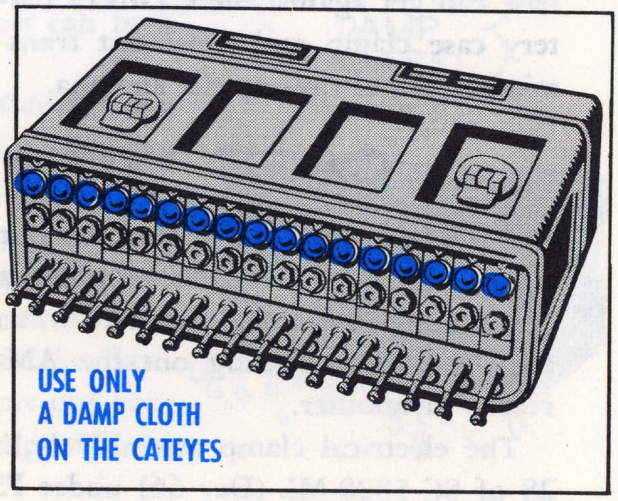


Hold one, Owen!

If you're about to clean the SB-22( )/PT switchboard's cateyes and designation strips, back off a minute and heed.

Use only a water-dampened cloth to do the job.

Solvents can discolor the designation strips, and rub the luminous-painted eyeballs right off the balls . . . and at night, especially, it would be mighty hard to tell if they're rolling around for you.



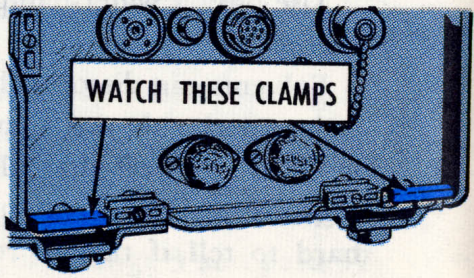
UP YOUR ANTENNA

So, you've got your mitts on one of those petite portables and you're pickin' up points for improving tricky transmission. That's swell!

For short distances you can usually get the talkin' across in CH 1 position when the AS-1999 is down 'cause of the higher RF output.

But, it's not so in CH 2 position . . . and with the antenna pushed down, the base can get against the CY-6115 battery case clamp and short out transmission. So, always up the antenna.

CARE WITH THE CLAMP



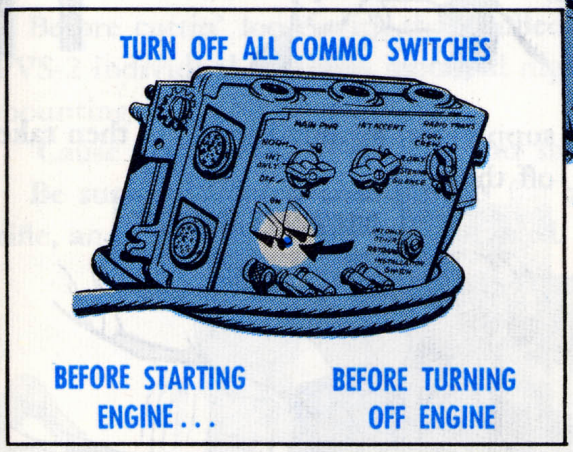
A knock, bang, chug or slam can put those hinged clamps on the AM-598/U amplifier-power supply out of commission. So, take care when you're kicking around, or pulling out the AM-598 for one reason or another.

The electrical clamp assembly is listed on Page 28 of SC 5820-ML (Dec 66) under FSN 5820-378-5205.

OFF TO THE SWITCHES

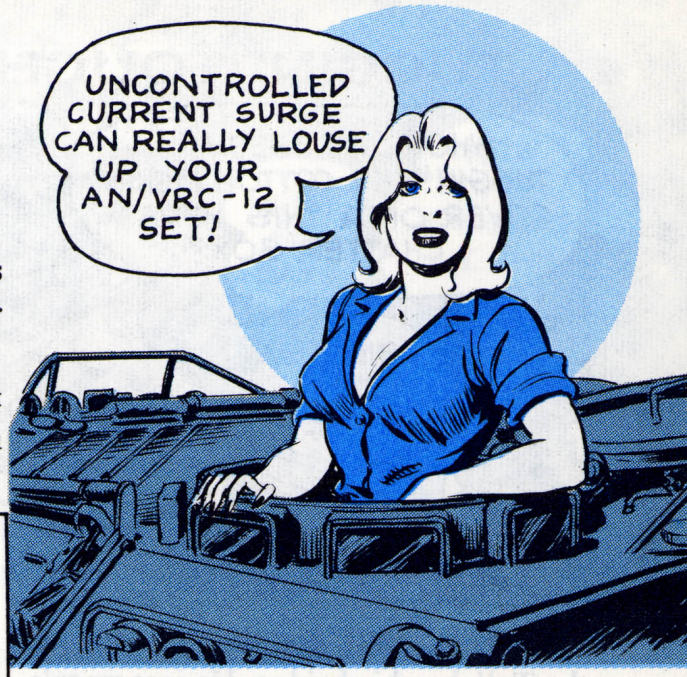
Turn off those AN/VRC-12 series radio set switches in your wheeled or tracked vehicle.

Don't hesitate, don't dawdle, don't reflect . . . just snap 'em off before you start the engine.



If you don't, uncontrolled current surge can really louse up your set.

If it's a slave start, keep radio switches off until you disconnect the slave cable and turn on the master battery switch.



To give you tracked vehicle radiotypes a hand in knocking the current surge, see if MWO 11-5820-401-35/1 (Jun 65) has been applied. If this AM-1780 audio frequency amplifier surge burnout stopper hasn't, get in touch with your maintenance support, and have them get the parts and put 'em in.

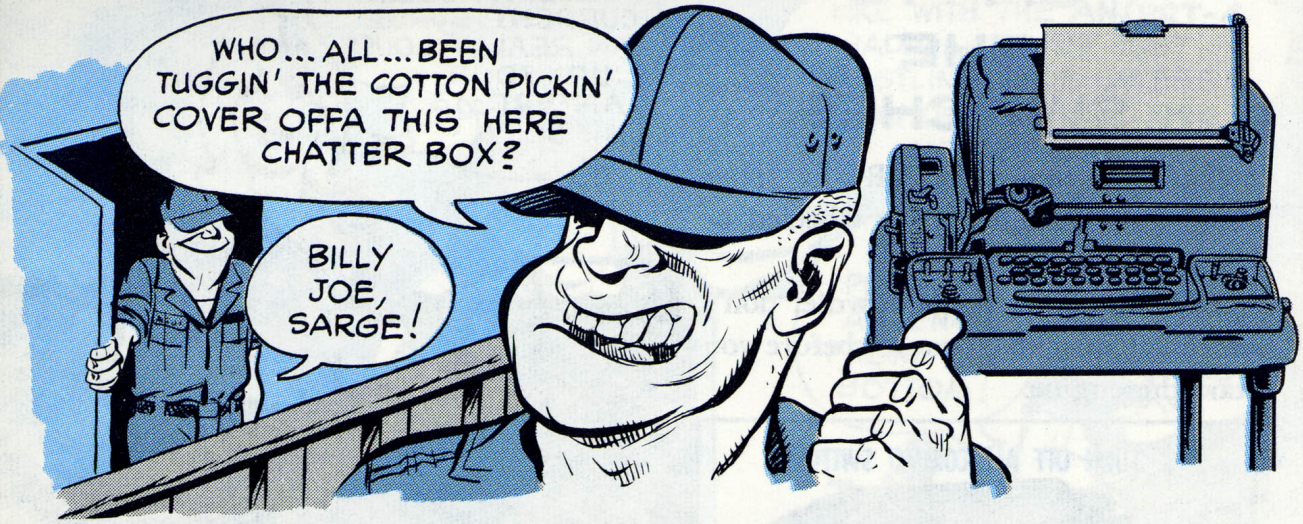
WET COVER WOES

Those canvas dust or protective covers for your AN/VRC-12 series radio set components can be a problem after a heavy rain.

That is . . . unless you remove that CW-653 cover, FSN 5820-082-3741, from the RT-246, -524 receiver-transmitter,or CW-649, FSN 5820-082-3742, from the R-442 receiver and let 'em dry.

Otherwise, those covers, which are listed on pages 258 and 260 in SC 5820-IL-1 (Oct 66), could keep moisture hanging around your equipment for days. Not only will that unwanted water short out your radio . . . the canvas covers will wind up with the wet-rot blues.

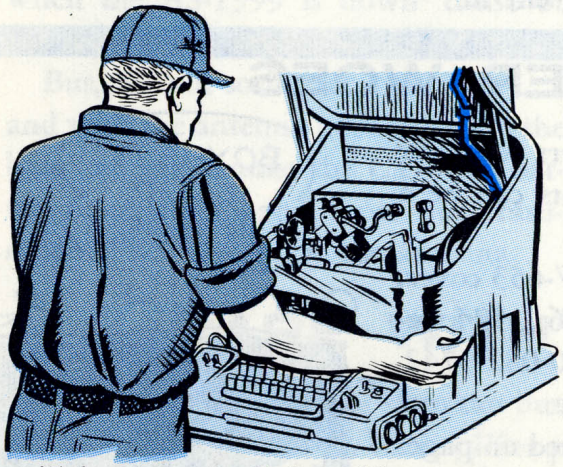
TUGGIN' TOUGH ON TT PLUGS



Actually, Billy Joe didn't jump off the Tallahatchie bridge. He just wasn't watching what he was doing.

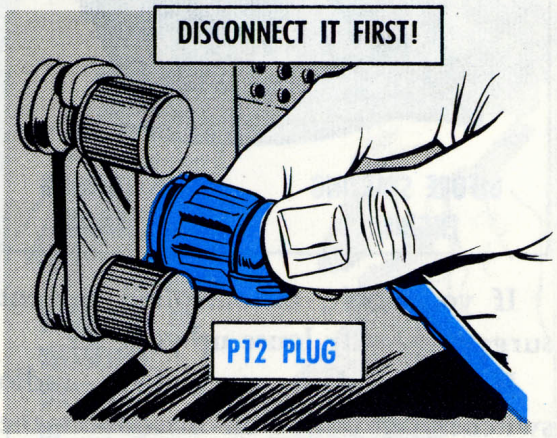
That's like the guy who's pulling the cover off the TT-76( ) teletypewriter reperforator-transmitter or removing the transmitter-distributor.

'Cause an Army-type paying a no-never-mind winds up disconnecting cables in the oddest places . . . like in the middle or just back of the plug, and lops 'em right out.



Take the copy light cable . . .

Keep in mind when you're removing the TT cover, open the lid first, disconnect the P12 plug from the J12 jack on the right-hand side of the power supply and terminal unit . . . then take off the cover.



Same goes for the P6 plug for the transmitter-distributor that's connected to the J6 jack in the TT-76's base. Just make sure the plug's free before pulling out the component.

Sure, these tiny plugs are tough, but the cable won't take a lot of rough tuggin'. So, remember to give 'em the gentle disconnect treatment.

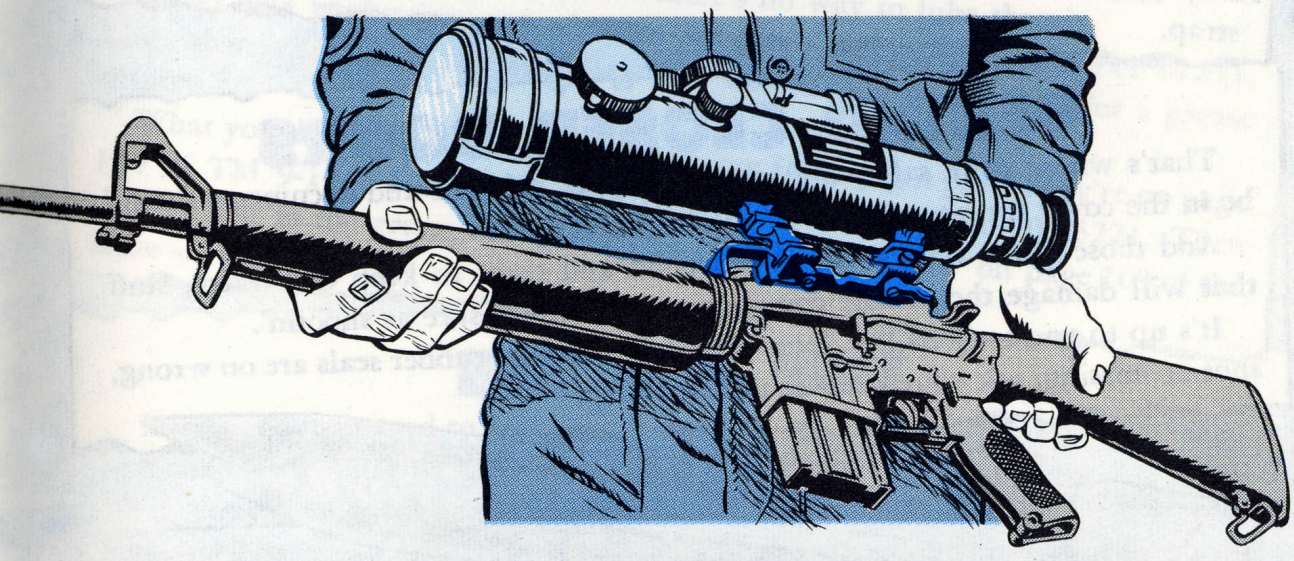
FIX 'ER FLAT ... AND SNUG

You say your Starlight scope on your M16 rifle is on the fritz. Like, after a couple or three bead shots she jumps outta zero.

Before cuttin' loose with the muffled cussin' against your AN/PVS-1 or AN/PVS-2 individual weapons mounted night vision sight, take a look at the adapter mounting assembly.

'Cause a mismounted adapter can shift and throw you off anytime.

Be sure the adapter assembly is flat against the top of the receiver on your rifle, and shove 'er all the way forward.



Team this up with the steps for installing on Page 21 of TM 11-1090-268-13 (Jan 67) for the AN/PVS-1, or Page 22 of TM 11-5855-203-13 (Apr 67) for the AN/PVS-2, and you'll be in the class with William Tell.

PAMPER A PIPSY-4

Hey, hold it, freight man in an air call-carry wagon. When you're bringing in an AN/PPS-4() radar set for troops on the firing line, don't swing that chopper low and kick the set out of the chariot. If you can't set the chopper down, lower the Pipsy-4 to the ground by rope. Bumping it out can really make that Silent Sentry silent.

HAWK NOTES

THROUGH THE STRAP

The way they're being used up you'd think they were going out of style—the connector adapter, FSN 5935-073-5331, that's part of the elevon follow-up cable for your Hawk AN/MSM-43 organizational maintenance shop equipment.

Seems that the adapter pins get busted when the cable is connected to the missile follow-up jack. This will happen when the cable is hooked up from the bottom of the bird. This way the weight of the cable pulls on the adapter, putting pressure on the pins.

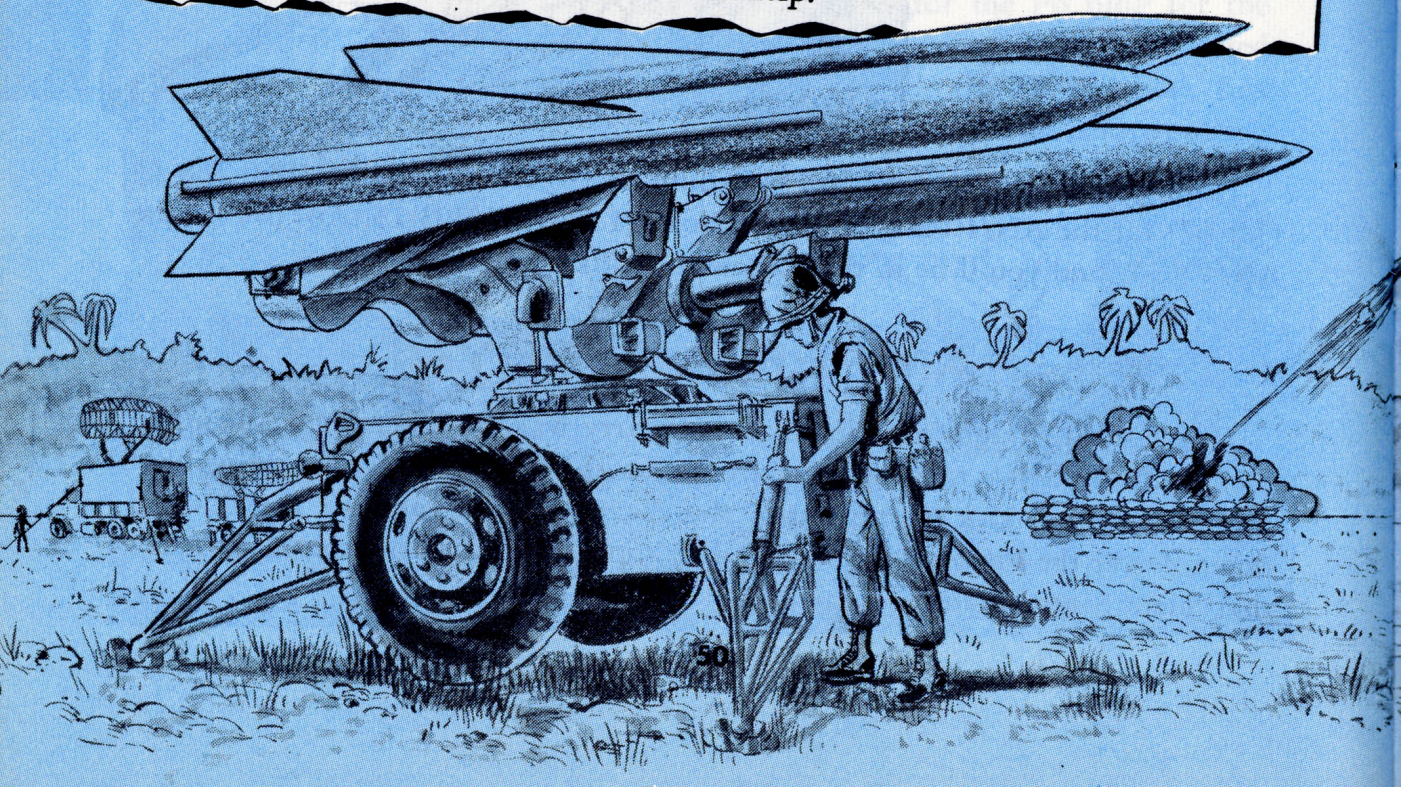
The odds are you won't have broken adapter pins if you connect the cable the right way—by first running it through the hooks on the missile umbilical strap.

BEHIND CLOSED DOORS

That's where your safety and arming device, initiator and documents should be in the cover for your Hawk missile container.

And those doors want to be closed good and tight to keep out water, stuff that will damage the missile components and papers sure as shootin'.

It's up to you to keep the doors closed, but if their rubber seals are on wrong, shot or missing, ask your support unit for help.



HAWK NOTES

THROUGH THE STRAP

The way they're being used up you'd think they were going out of style—the connector adapter, FSN 5935-073-5331, that's part of the elevon follow-up cable for your Hawk AN/MSM-43 organizational maintenance shop equipment.

Seems that the adapter pins get busted when the cable is connected to the missile follow-up jack. This will happen when the cable is hooked up from the bottom of the bird. This way the weight of the cable pulls on the adapter, putting pressure on the pins.

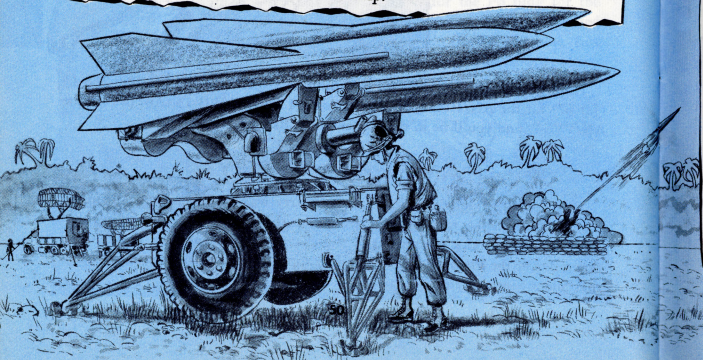
The odds are you won't have broken adapter pins if you connect the cable the right way—by first running it through the hooks on the missile umbilical strap.

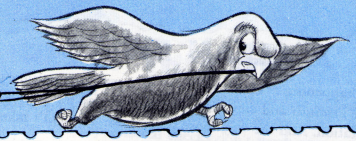
BEHIND CLOSED DOORS

That's where your safety and arming device, initiator and documents should be in the cover for your Hawk missile container.

And those doors want to be closed good and tight to keep out water, stuff that will damage the missile components and papers sure as shootin'.

It's up to you to keep the doors closed, but if their rubber seals are on wrong, shot or missing, ask your support unit for help.





SEEING STARS?

What to do.

LO 9-1440-500-12/1 (Nov 66) tells you to mount the LO on the left side of your Hawk launcher's boom support. But TB 746-92-2 (Nov 66) shows that the national symbol is painted in the same place.

You won't find a star on the underside of the rear compartment cover. Mount the LO there.

FIT TO BE GREASED

How's that? You'd like to be able to use some GAA on the aft outrigger pivot pins on your Hawk launcher . . . but there's no way to lube them?

Looks like you've got one of those launchers before serial number 07231. More than a few of these have pivot pins without a threaded hole for a grease fitting.

What you do is get your support unit to put in the right pins. They're on page 154 of TM 9-1440-500-15P/1 (Sep 67)—under FSN 1440-703-3221. Then you can put in the grease fitting—FSN 4730-172-0010. It's on page 109 of the same -15P/1.

BET IT'S WET

Maybe it's happened to you.

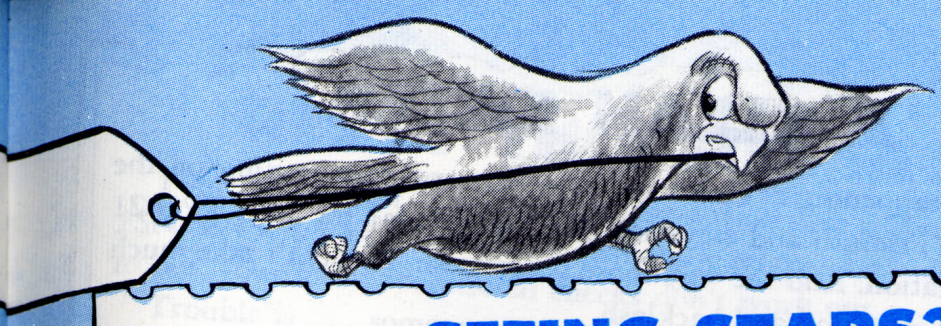
Your Hawk launcher goes into standby when you put it in remote . . . you get bit by stray current when you touch bare metal . . . or the launcher acts like it has a mind of its own when you turn the elevation and azimuth handwheels on the launcher control unit.

Chances are the LCU has a snootful of moisture.

Once you get rid of the stuff, you can help to keep it out by making sure the pressure equalizer valve's closed except when the LCU is moved by air . . . keeping the lid closed when you can, during bad weather . . . and being sure the lid is in good shape and fits tight.

Also—and here you'll need your support unit's help—replaced parts should have waterproof gaskets or seals. The control panel assembly should be sealed whenever it's taken out and then put back in the LCU.

PS MORE



SEEING STARS?

What to do.

LO 9-1440-500-12/1 (Nov 66) tells you to mount the LO on the left side of your Hawk launcher's boom support. But TB 746-92-2 (Nov 66) shows that the national symbol is painted in the same place.

You won't find a star on the underside of the rear compartment cover. Mount the LO there.

FIT TO BE GREASED

How's that? You'd like to be able to use some GAA on the aft outrigger pivot pins on your Hawk launcher . . . but there's no way to lube them?

Looks like you've got one of those launchers before serial number 07231. More than a few of these have pivot pins without a threaded hole for a grease fitting.

What you do is get your support unit to put in the right pins. They're on page 154 of TM 9-1440-500-15P/1 (Sep 67)—under FSN 1440-703-3221. Then you can put in the grease fitting—FSN 4730-172-0010. It's on page 109 of the same -15P/1.

BET IT'S WET

Maybe it's happened to you.

Your Hawk launcher goes into standby when you put it in remote . . . you get bit by stray current when you touch bare metal . . . or the launcher acts like it has a mind of its own when you turn the elevation and azimuth handwheels on the launcher control unit.

Chances are the LCU has a snootful of moisture.

Once you get rid of the stuff, you can help to keep it out by making sure the pressure equalizer valve's closed except when the LCU is moved by air . . . keeping the lid closed when you can, during bad weather . . . and being sure the lid is in good shape and fits tight.

Also—and here you'll need your support unit's help—replaced parts should have waterproof gaskets or seals. The control panel assembly should be sealed whenever it's taken out and then put back in the LCU.

PS MORE

A CLEAN SWEEP

It's been happening at Hawk outfits—dirt and dust getting on the gears in the azimuth and elevation comparators for the AN/TPQ-21 simulator station. And the way those gears mesh, it doesn't take much wear to get gear slop and backlash.

How does the dirt and stuff get at the gears?

When you open the comparator drawers to make an adjustment and then forget to close them when you're done. That's one way. Those drawers want to be closed, especially when the equipment's running.

Using a broom to clean the simulator station, while the ventilation blowers are working, is another way. Make with your vacuum cleaner instead—the way it says in TM 9-1430-512-12/1 (10 Jul 64). And it's a good idea to vacuum with the blowers off.

SNEAKY LEAK

Your Hawk AN/TPQ-21 simulator station is no place for a crowd. But that's what you'll get if your support people have to work on the cable harness in the cable entry enclosure.

And work on they will if the four BA-30 batteries mounted in the enclosure leak and eat into the cables. The batteries are the ones that let you and the people in the battery control central talk back and forth and are in just the right spot to spill their insides onto the cables.

So take a close look at 'em from every angle once a week. And if you're not going to use the simulator station for a spell, take the batteries out of their mounts.

CHANGE LUBES

Here you are . . . the latest word on what to use for lubing drawer assembly slides and latches, hinges and handles in your Hawk AN/TPQ-21 simulator station.

To be up-to-date, page 243 of TM 9-1430-512-12/1 (Jul 64) should say to use aircraft and instrument grease on the slides. Page 15 of TM 9-4935-501-15P/1 (Sep 67) lists a 1-lb can under FSN 9150-985-7246.

And instrument lubricating oil goes on the latches, hinges and handles. There's a 1-qt can—FSN 9150-223-4129—on page 17 of the same TM.

RELAY THIS MESSAGE

Your Hawk AN/TPQ-21 simulator station sure is loaded with the FSN 5945-968-4499 variety of armature relays. And when they go to pot, your daily operational checks don't work out.

Trouble is . . . some guys are treating 'em like they're real rugged, and this they're not.

So handle the relays like they can get battered real easy—'cause they can.

Also make sure you use the right mounting screws when you put in a relay. Your support people have them—FSN 5305-582-0142 on page 190 of TM 9-1430-512-15P/1 (Dec 67).

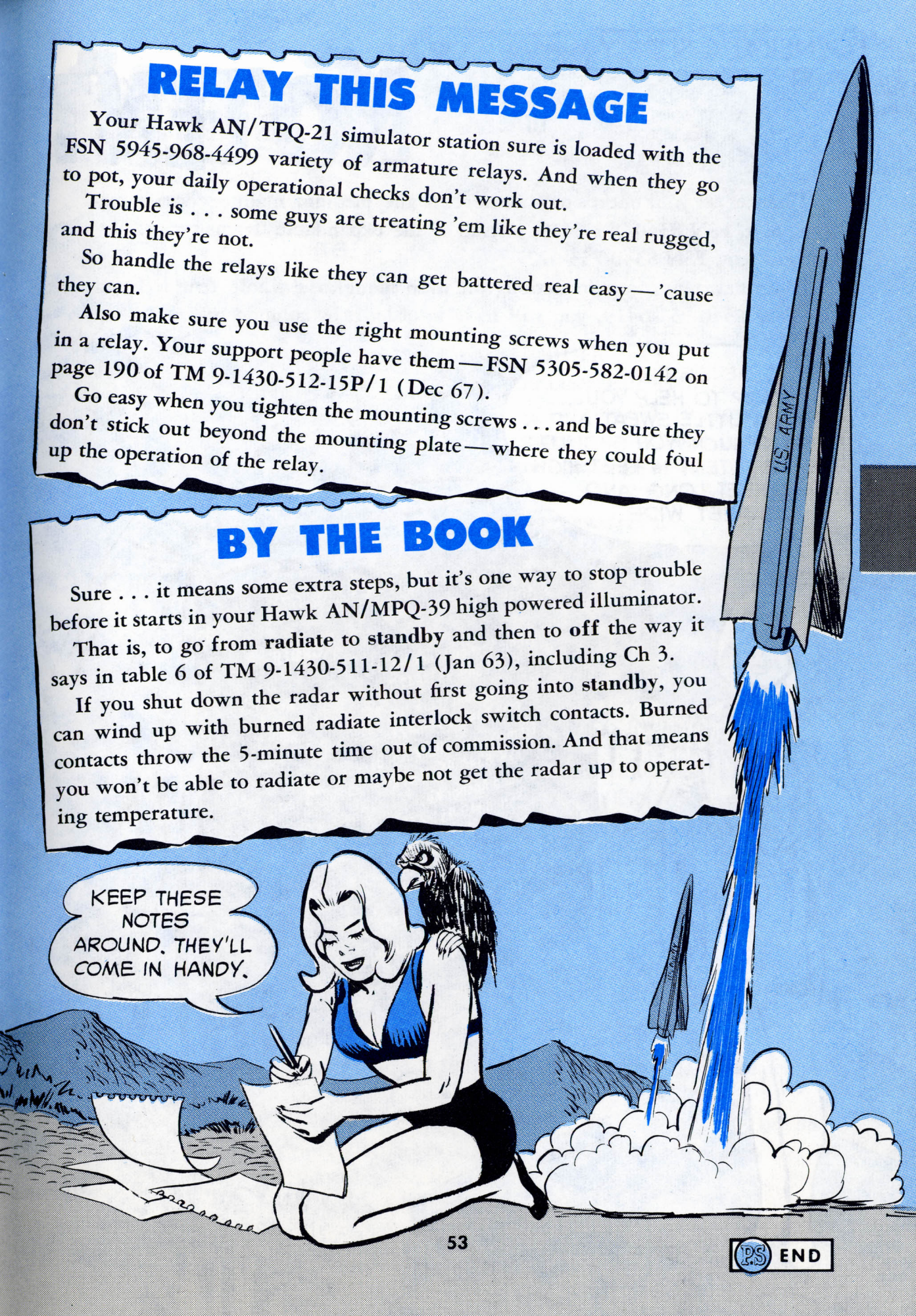
Go easy when you tighten the mounting screws . . . and be sure they don't stick out beyond the mounting plate—where they could foul up the operation of the relay.

BY THE BOOK

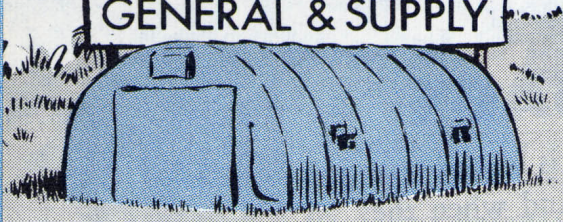
Sure . . . it means some extra steps, but it's one way to stop trouble before it starts in your Hawk AN/MPQ-39 high powered illuminator.

That is, to go from **radiate** to **standby** and then to **off** the way it says in table 6 of TM 9-1430-511-12/1 (Jan 63), including Ch 3.

If you shut down the radar without first going into **standby**, you can wind up with burned radiate interlock switch contacts. Burned contacts throw the 5-minute time out of commission. And that means you won't be able to radiate or maybe not get the radar up to operating temperature.



END

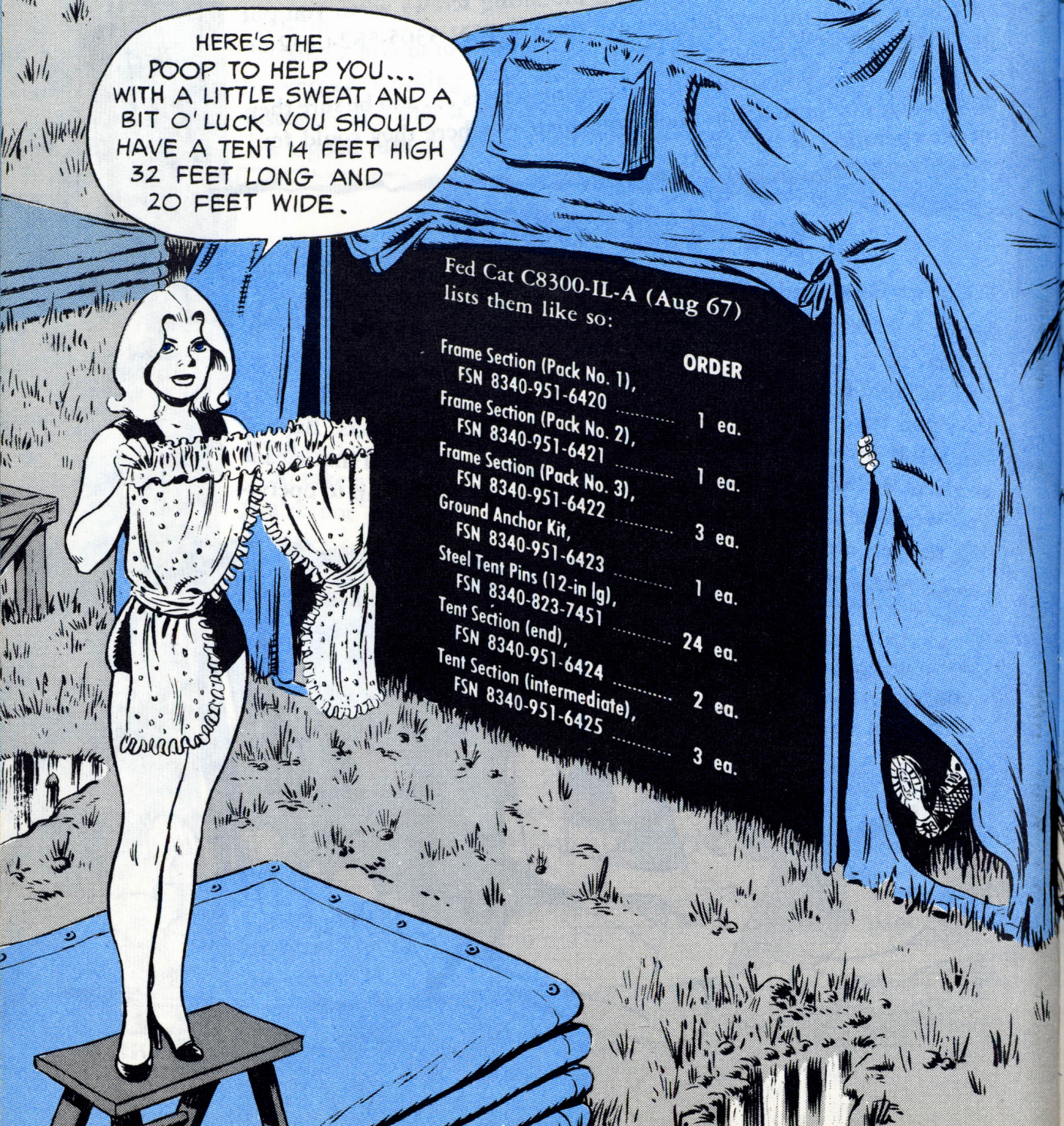


WITH A LITTLE DIGGIN' . . .

NO TENT

Chances are your outfit's now authorized the medium maintenance frame-type tent, FSN 8340-951-6419, instead of the expandable frame-type light-weight tent, FSN 8340-753-6227.

Your new tent comes in sections and even though the whole tent is listed by FSN 8340-951-6419, you still have to order it by components.



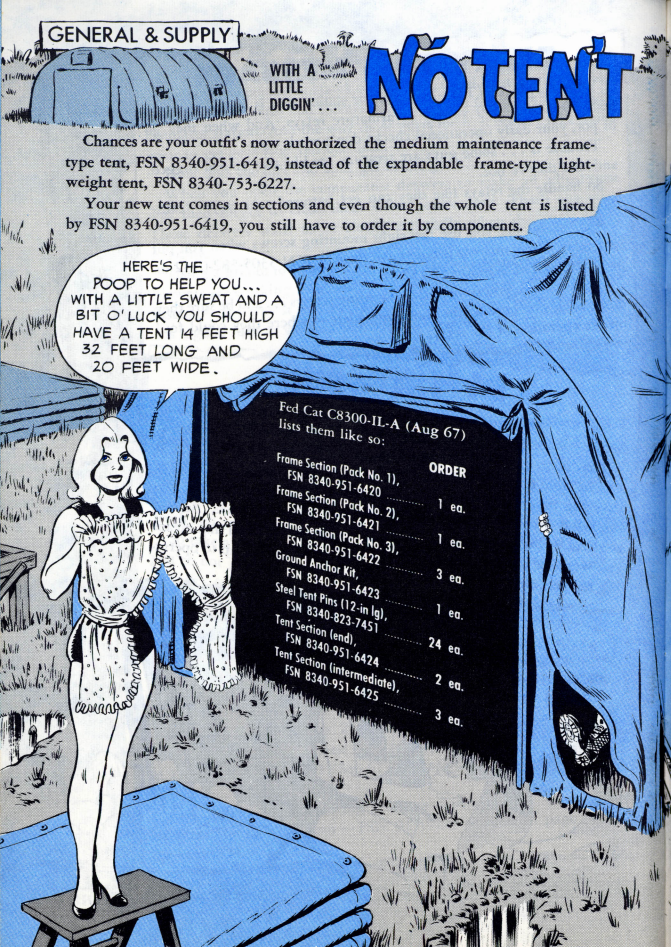
Fed Cat C8300-IL-A (Aug 67) lists them like so:

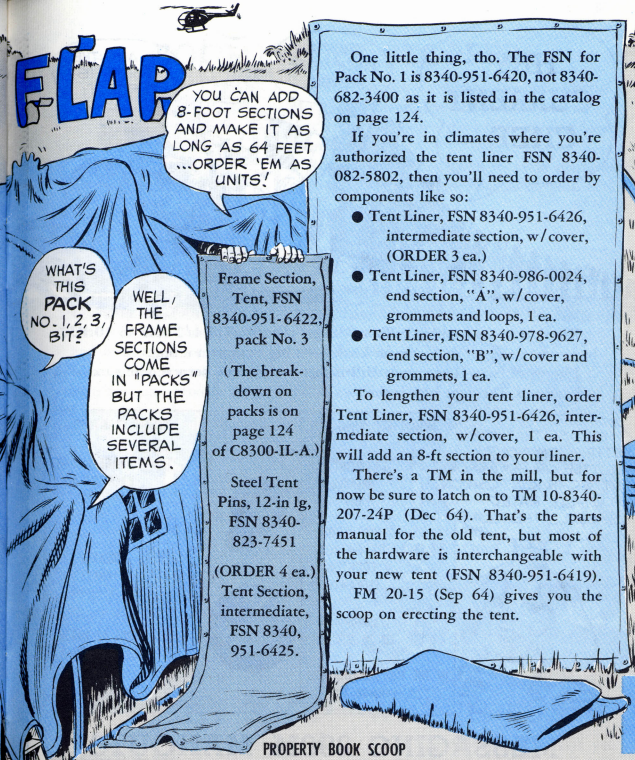
	ORDER
Frame Section (Pack No. 1), FSN 8340-951-6420	1 ea.
Frame Section (Pack No. 2), FSN 8340-951-6421	1 ea.
Frame Section (Pack No. 3), FSN 8340-951-6422	3 ea.
Ground Anchor Kit, FSN 8340-951-6423	1 ea.
Steel Tent Pins (12-in lg), FSN 8340-823-7451	24 ea.
Tent Section (end), FSN 8340-951-6424	2 ea.
Tent Section (intermediate), FSN 8340-951-6425	3 ea.

WITH A LITTLE DIGGIN' . . . NO TENT FLAP

Chances are your outfit's now authorized the medium maintenance frame-type tent, FSN 8340-951-6419, instead of the expandable frame-type lightweight tent, FSN 8340-753-6227.

Your new tent comes in sections and even though the whole tent is listed by FSN 8340-951-6419, you still have to order it by components.





One little thing, tho. The FSN for Pack No. 1 is 8340-951-6420, not 8340-682-3400 as it is listed in the catalog on page 124.

If you're in climates where you're authorized the tent liner FSN 8340-082-5802, then you'll need to order by components like so:

- Tent Liner, FSN 8340-951-6426, intermediate section, w/cover, (ORDER 3 ea.)
- Tent Liner, FSN 8340-986-0024, end section, "A", w/cover, grommets and loops, 1 ea.
- Tent Liner, FSN 8340-978-9627, end section, "B", w/cover and grommets, 1 ea.

To lengthen your tent liner, order Tent Liner, FSN 8340-951-6426, intermediate section, w/cover, 1 ea. This will add an 8-ft section to your liner.

There's a TM in the mill, but for now be sure to latch on to TM 10-8340-207-24P (Dec 64). That's the parts manual for the old tent, but most of the hardware is interchangeable with your new tent (FSN 8340-951-6419).

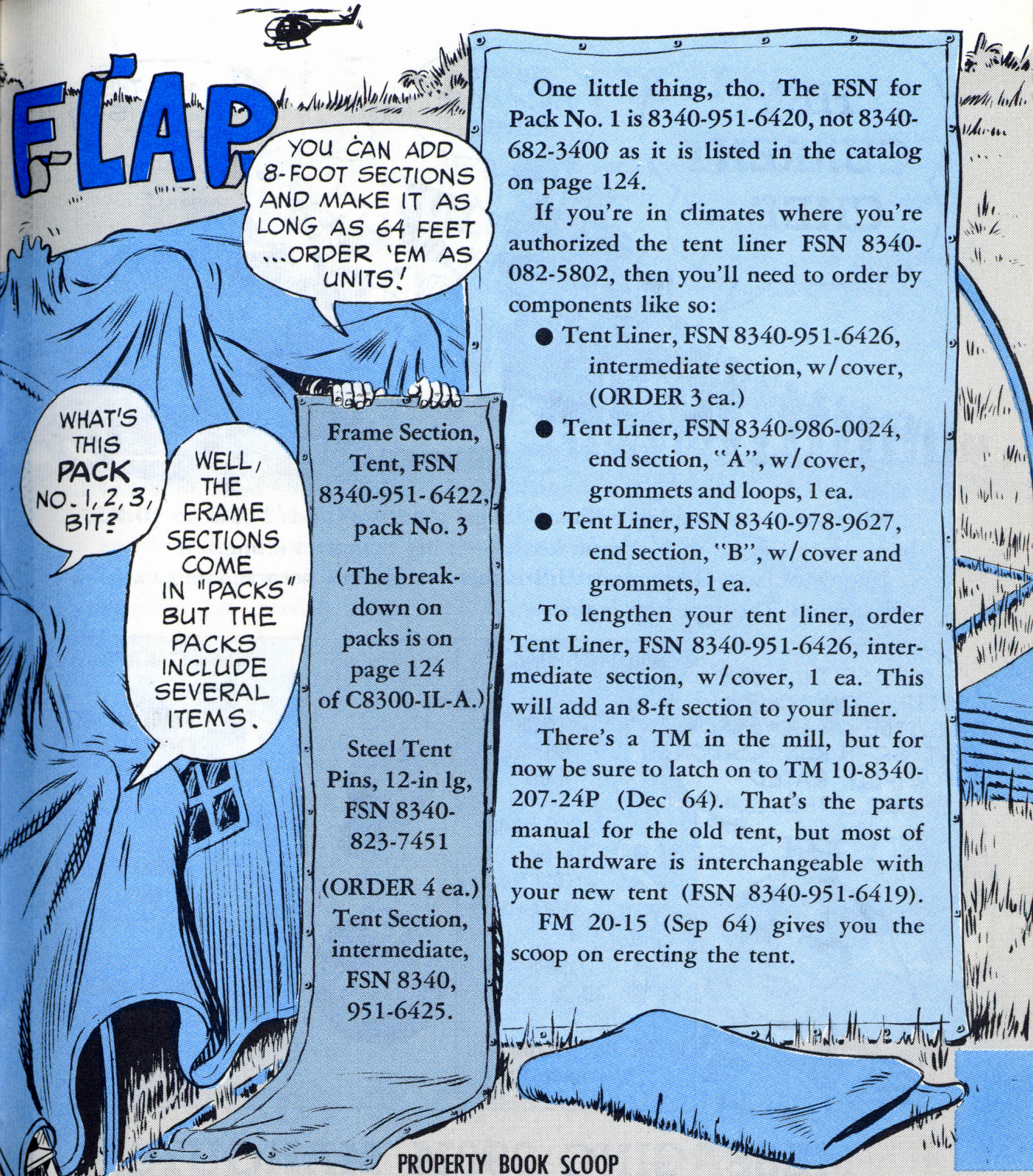
FM 20-15 (Sep 64) gives you the scoop on erecting the tent.

PROPERTY BOOK SCOOP

The tent and the liner take special handling in the property book since neither one is issued as a package.

You record the complete tent under its basic FSN 8340-951-6419, on one page. Then you have to use a separate page for each of the components, like it says in AR 735-35 for substitute items.

You give the liner the same property book treatment.



One little thing, tho. The FSN for Pack No. 1 is 8340-951-6420, not 8340-682-3400 as it is listed in the catalog on page 124.

If you're in climates where you're authorized the tent liner FSN 8340-082-5802, then you'll need to order by components like so:

- Tent Liner, FSN 8340-951-6426, intermediate section, w/cover, (ORDER 3 ea.)
- Tent Liner, FSN 8340-986-0024, end section, "A", w/cover, grommets and loops, 1 ea.
- Tent Liner, FSN 8340-978-9627, end section, "B", w/cover and grommets, 1 ea.

To lengthen your tent liner, order Tent Liner, FSN 8340-951-6426, intermediate section, w/cover, 1 ea. This will add an 8-ft section to your liner.

There's a TM in the mill, but for now be sure to latch on to TM 10-8340-207-24P (Dec 64). That's the parts manual for the old tent, but most of the hardware is interchangeable with your new tent (FSN 8340-951-6419).

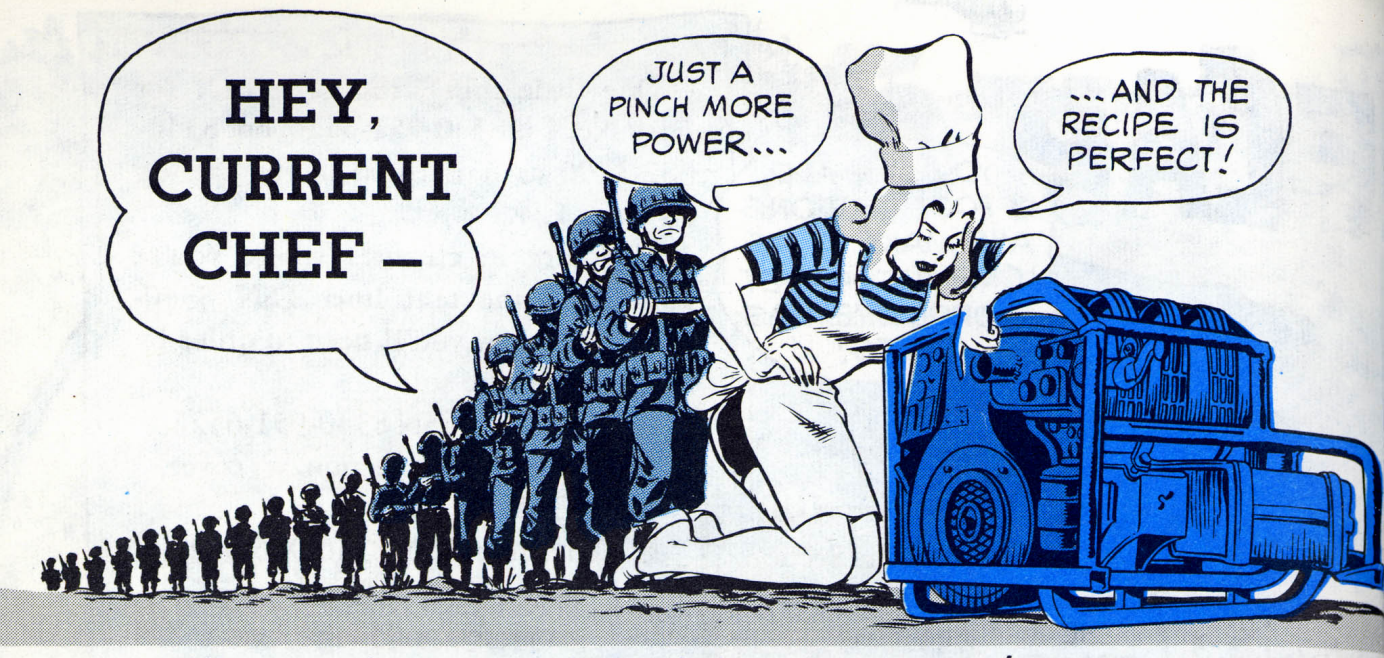
FM 20-15 (Sep 64) gives you the scoop on erecting the tent.

PROPERTY BOOK SCOOP

The tent and the liner take special handling in the property book since neither one is issued as a package.

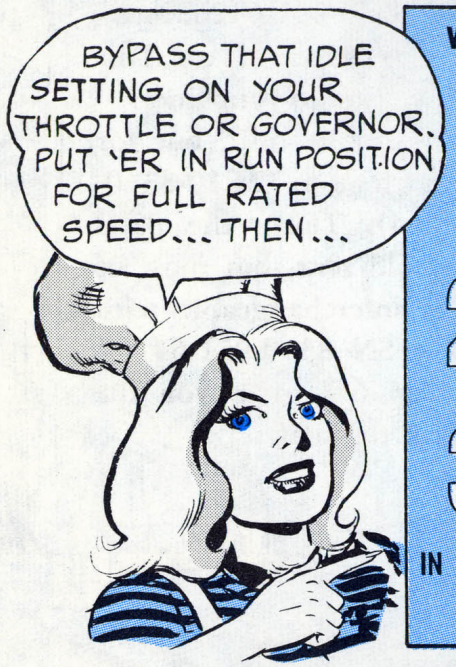
You record the complete tent under its basic FSN 8340-951-6419, on one page. Then you have to use a separate page for each of the components, like it says in AR 735-35 for substitute items.

You give the liner the same property book treatment.



Kilowatt cooks running military design generators, 1-1/2 KW to 10 KW, have a new mix for their current kettles — a big change in idling.

Late word from Horsepower Hill is that everybody's been running too slow on warmup. The dope now is this —



WHEN STOPPING...

1. CIRCUIT BREAKER OFF
2. VOLT KNOB ALL THE WAY COUNTER-CLOCKWISE
3. WARMUP — 8 TO 10 MINUTES

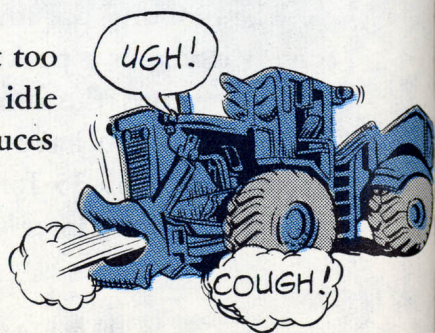
IN THE TROPICS YOU NEED LESS WARMUP TIME

WHEN STARTING...

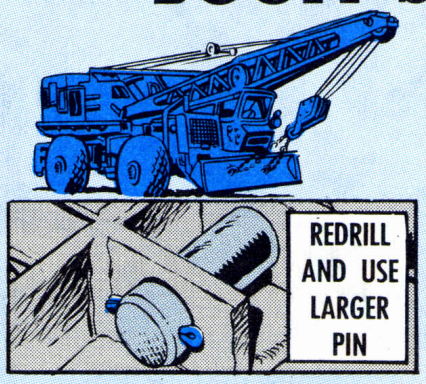
1. VOLTAGE ADJUST, BACK OFF ALL THE WAY
2. BREAKER OFF
3. RUN AT RATED SPEED 3 TO 5 MINUTES

MESSAGING 290M MAHOUTS

Your 290M tractor probably has its low idle speed set too low. The latest word from the headshed is to set the low idle speed up to 675-725 RPM. It won't affect full power, reduces vibration, and your valves won't carbon so much.



BOOM STOPS STOPPERS

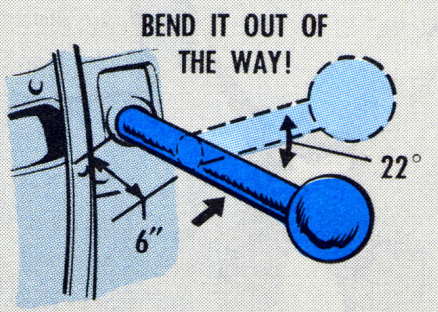


If you have an American Hoist and Derrick Model 2380 crane, here's an ounce of prevention that'll keep the boom stops from coming loose from the support.

Redrill the existing holes to ¼-in diameter and then use the stronger ¼-in cotter pins, FSN 5315-059-0218.

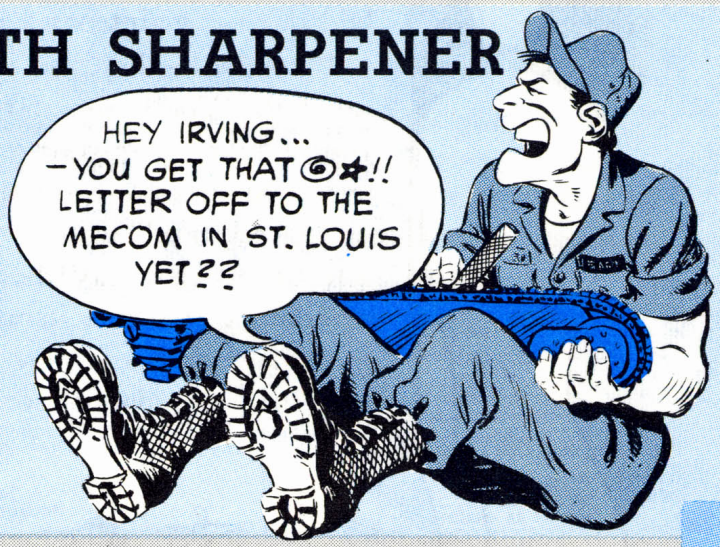
NO KNUCKLE BUSTER NOW

To keep from busting your knuckles when engaging the front-wheel drive on your American Hoist and Derrick Crane Model 2380, heat and bend the front wheel-drive lever forward. Measure the lever 6 inches from the floor and then heat and bend it forward 22° toward the front of the cab.

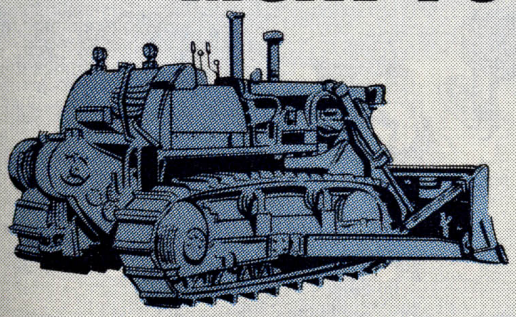


NEW TOOTH SHARPENER

So you're tired of hand-filing chain-saw teeth 4 or 5 times a day. But you don't have a manual for that spankin' new Grinding Machine, Saw Tooth, FSN 3415-999-3040. Ask for Manufacturer's Tech Manual 7610-C-1-3740 from Mobility Equipment Command, AMSME-STD-L, 4300 Goodfellow Blvd., St. Louis, Mo. 63120.



RIGHT POOP – WRONG PUB



The info that TM 5-2410-214-12 says you need to adjust final drive bearings on your D7E is—of all places—in the -35 version of the family TM. You'll find instructions on page 220, para 83 of TM 5-2410-214-35, and you can use either of two wrenches—FSN 4933-532-3836, or the 2-hook type, FSN 5120-293-0316.

THE NEW LOOK IN REPAIR PARTS MANUALS

The best yet!

That's the word on the new repair parts and special tool lists (RP&STL's).

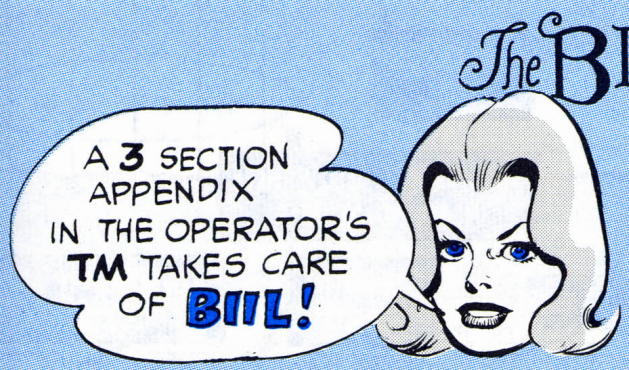
Everything is clear and simple and neatly laid out for maintenance and supply men.

Best of all, they list allowances in whole numbers. You'll use a formula only when you're figuring up your initial allowances for over 100 pieces of equipment.

"As required" items are flagged with an asterisk, as they have been in the past. The mandatory stockage items are coded with a +. This + is brand new so you may not see it in the parts manual for a while.

The new format will apply when a RP&STL is published as a -P manual (-12P, -20P, -14P, -15P, -24P, -25P) and also when it's included in a maintenance TM. It also applies to the BIIL in the operator's manual.

The consolidated type repair parts manual—like the tank-automotive equipment manual (TM 9-2300-223-20P) remains on the scene, as is.



The BIIL

Section 1 explains the BIIL format and tells how to use it.

Section 2 lists the items in the BIIL.

Section II. BASIC ISSUE ITEMS

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr. Code — Usable On Code	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) QTY FURN WITH EQUIP	(7) ILLUSTRATION (a) FIGURE NO.	(7) ILLUSTRATION (b) ITEM NO.
		GROUP 26 - ACCESS, TOOLS, & TEST EQUIP					
		2602.1 ACCESSORIES					
-P-C---	7520-559-9618	CASE OPERATION & MAINTENANCE PUBLICATIONS	EA		1	2	2

Section 3 lists the authorized maintenance and operation supplies, like grease, oil, fuels, chemicals, preservatives needed for the equipment. The section also has handy usage and maintenance scoop, like the amount of fuel, water, fluids, oil, grease, antifreeze, etc., the equipment takes for initial operation — and for an 8-hour pull.

Section III. MAINTENANCE AND OPERATING SUPPLIES

(1) COMPONENT APPLICATION	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION	(4) QTY REQUIRED FOR INITIAL OPERATION	(5) QTY REQUIRED FOR 8 HOURS OPERATION	(6) NOTES
AIR CLEANER (1)		OIL LUBRICATING	1/2 QT		(1) USE OIL AS PRESCRIBED IN (2) BELOW
CRANKCASE (2)		OIL LUBRICATING 5 GL DRUM AS FOLLOWS			(2) INCLUDES QUANTITY OF OIL TO FILL ENGINE OIL SYSTEMS AS FOLLOWS

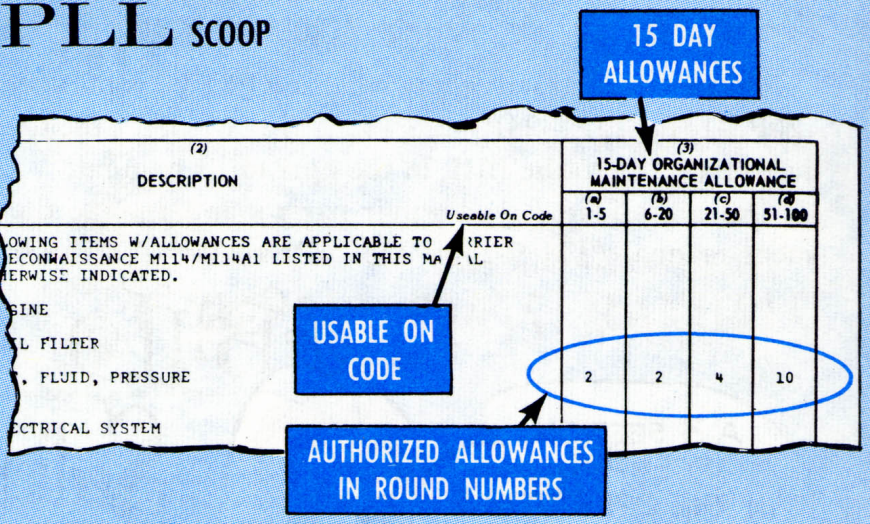
ORGANIZATIONAL Parts TM'S

I. Introduction
II. Prescribed Load Allowance (PLA)
III. Repair Parts
IV. Special Tools
V. Index

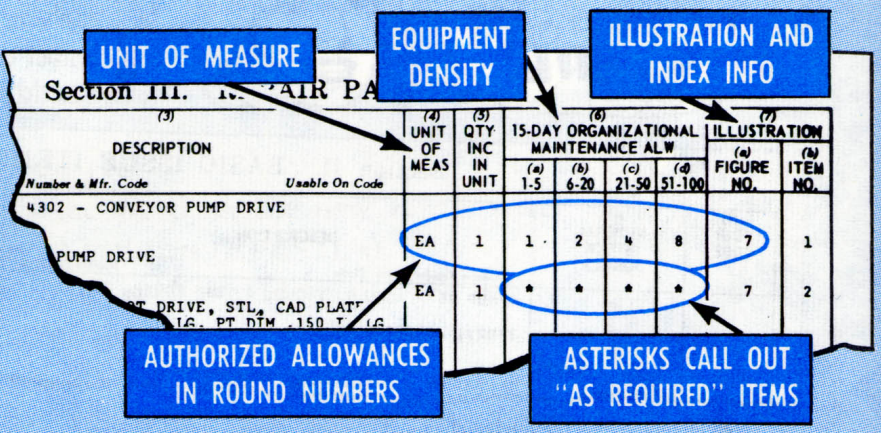
PS MORE

PLL SCOOP

PLA — The PLA quotes initial stockage allowances for 15 days. It's a real neat plan, 'cause when you take the PLA's for all your equipment and put them together you come up with a big hunk of your unit's PLL.



Repair Parts List — The repair parts section lists all parts you're authorized to stock or use. It carries all items in the manual's PLA plus all the "as required" items you're authorized.

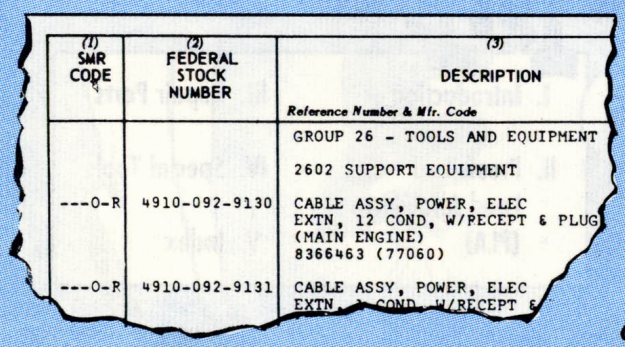


* The items that show a stockage allowance on this list are the same ones authorized for stockage by the PLA. All other items in the list are flagged with an asterisk.

Parts used on specific models or series of equipment are shown with a "usable on" code in the item description column. (This goes for the PLA, too.)

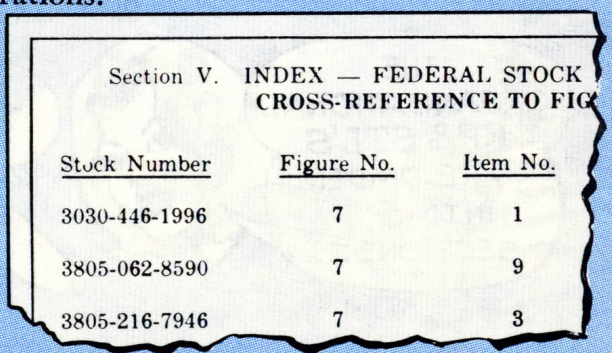
☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

SPECIAL TOOLS — If your equipment is authorized special tools, test and support equipment, the TM will cover the items in a separate list.



(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr. Code
		GROUP 26 - TOOLS AND EQUIPMENT
		2602 SUPPORT EQUIPMENT
---O-R	4910-092-9130	CABLE ASSY, POWER, ELEC EXTN, 12 COND, W/RECEPT & PLUG (MAIN ENGINE) 8366463 (77060)
---O-R	4910-092-9131	CABLE ASSY, POWER, ELEC EXTN, ... COND, W/RECEPT &

INDEX — The index helps you locate parts in the TM by crossing FSN's and item reference numbers to illustrations and item numbers in the illustrations.

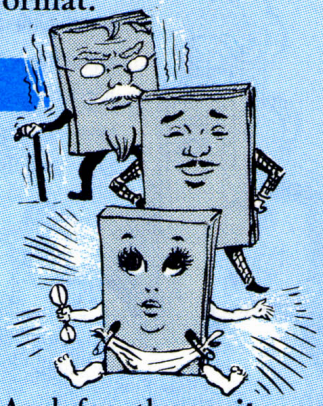


Section V. INDEX — FEDERAL STOCK
CROSS-REFERENCE TO FIG

Stock Number	Figure No.	Item No.
3030-446-1996	7	1
3805-062-8590	7	9
3805-216-7946	7	3

Differences...?

Some of the very first manuals published under the new format may not have all the fine features you'll find in the latest RP&STL's. That's 'cause some TM's had to go to press before all the latest improvements had jelled. But, eventually, all new repair parts manuals will sport the new, easy-to-use format.



EXAMPLES:

The very latest RP&STL's use a unit-of-measure (U/M) column in place of the unit-of-issue column used in older manuals, and early type RP&STL's. The "unit of measure" is the unit you normally use when you do a repair job. The U/M gives the amount or quantity (each, pair, pound, gallon, foot, ounce, can, etc.) your allowance is based on.

That is, a RP&STL quotes the U/M's you're authorized. And for the **unit of issue** info you need for your DA Form 2765, you go to the supply publications (SM's, SC's, ML's, etc.). Then all you have to do is order the **lowest number of units of issue** that'll provide the U/M's you're authorized.

In all cases, of course, it's a good idea to check for any **unit of issue** info you may have on an item from your supply support outfit.

☆ ☆ ☆ ☆ ☆ ☆ OTHER CHANGES ☆ ☆ ☆ ☆ ☆ ☆

In the latest RP&STL's you have fewer columns in the various sections. And, in RP&STL's that cover all levels of maintenance (like a -25P or a -15P TM), the separate sections for organizational level fall in a different sequence, so they're not numbered the same as they are in organizational level RP&STL's.

And, when changes or revisions are published on a RP&STL you'll have action codes to the left to tell you what's been updated. The codes, used along with the FSN or nomenclature info, are:

N — Points out a new item in the RP&STL.	C — Says a change has been made in the item's description.	F — Shows an FSN change.

TO KNOW YOUR RP&STL'S

When you crack a RP&STL for the first time stop at the "Introduction" section and read it carefully before you start thumbing through the manual. The section gives you complete info on the manual's format and its use.

If you have any problems or questions on a RP&STL just put in a DA Form 2028, Recommended Changes to DA Publications, or drop PS a line—Connie and Half-Mast will be standing by to lend a hand.

PS END

TO X OR NOT TO X

Dear Half-Mast,

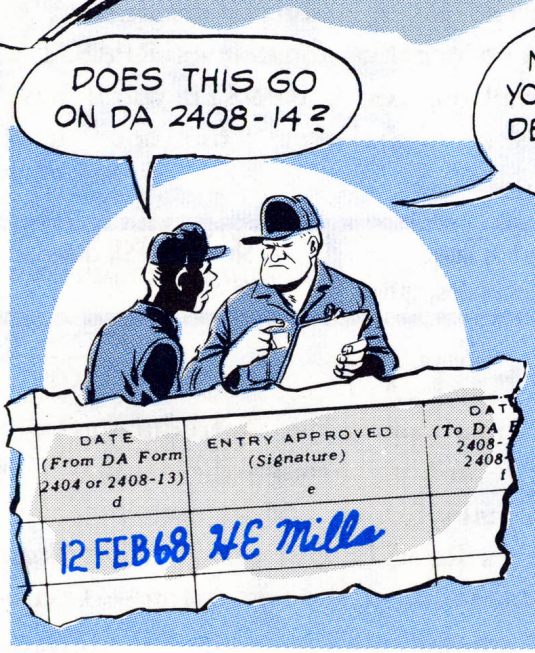
A deficiency is a fault, and DA Form 2408-14 is an uncorrected fault record — right? So, do we or don't we record deficiencies on DA 2408-14?

SFC D. D. S.

Dear Sergeant D. D. S.,

Except on aircraft, the maintenance supervisor decides when to record deficiencies on DA 2408-14.

On aircraft a deficiency — red X or circled red X — is not permitted on DA 2408-14. Even if a red X deficiency is downgraded to a circled red X for a one-time flight, it stays on DA 2408-13. And less-serious faults on aircraft are transcribed to the DA 2408-14 only as approved by the CO or his designated representative.

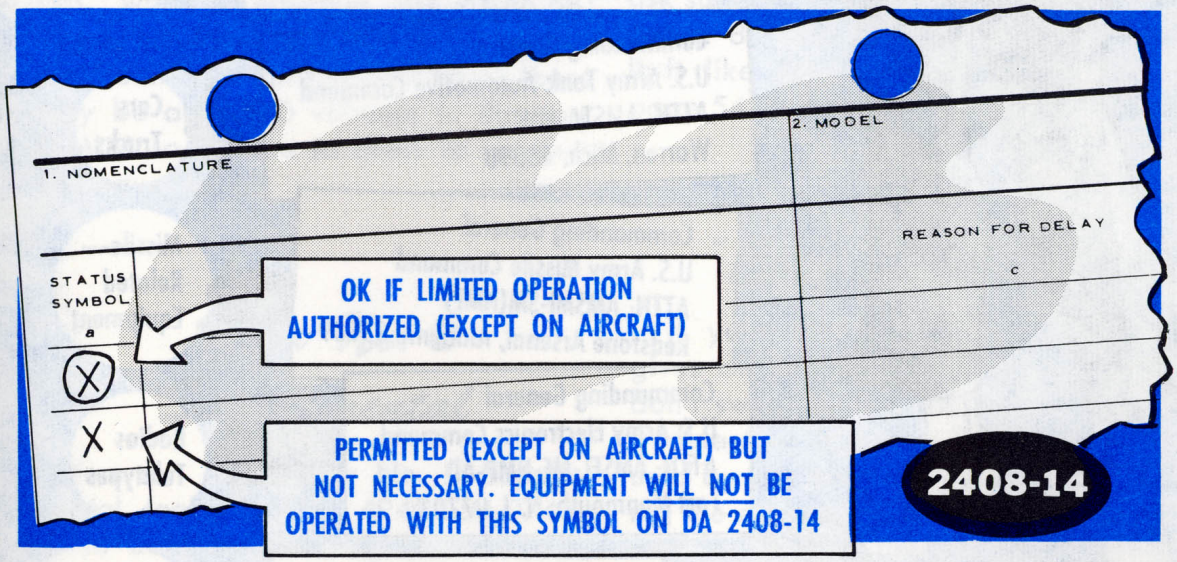


For all **other** equipment the maintenance supervisor decides which uncorrected deficiencies (faults) will be transcribed to DA 2408-14 and approves by signing in column e of the form.

Even though the decision is up to the maintenance supervisor, it's generally assumed that there's a need for entering an uncorrected fault on DA 2408-14 only on **operable** equipment. It's also assumed that when there's a deficiency, steps usually will be taken immediately to correct it (and record correction on DA 2408-3) or make out immediately a DA 2407 maintenance request to send the equipment to support. If this is done, no entry of the fault on DA 2408-14 is considered necessary. (The entry on DA 2404 plus a status entry on DA 2408-1 — if the equipment has one — will show the equipment has a deficiency.)

With a deficiency, the equipment is — by definition — inoperable (nonoperational). Even if the deficiency status symbol is a circled X, the equipment is inoperable **unless released for continued limited operation by command authority.**

So, it's normally assumed that there would be a need to enter only deficiencies with a circled X status symbol or less-serious faults on DA 2408-14. In fact, if limited operation of the equipment is to be authorized, it's considered advisable for **command** to temporarily downgrade an X symbol deficiency to a circled X deficiency (re-entering it on the next open line of DA 2408-1 and signing the new entry) before transcribing it to DA 2408-14.

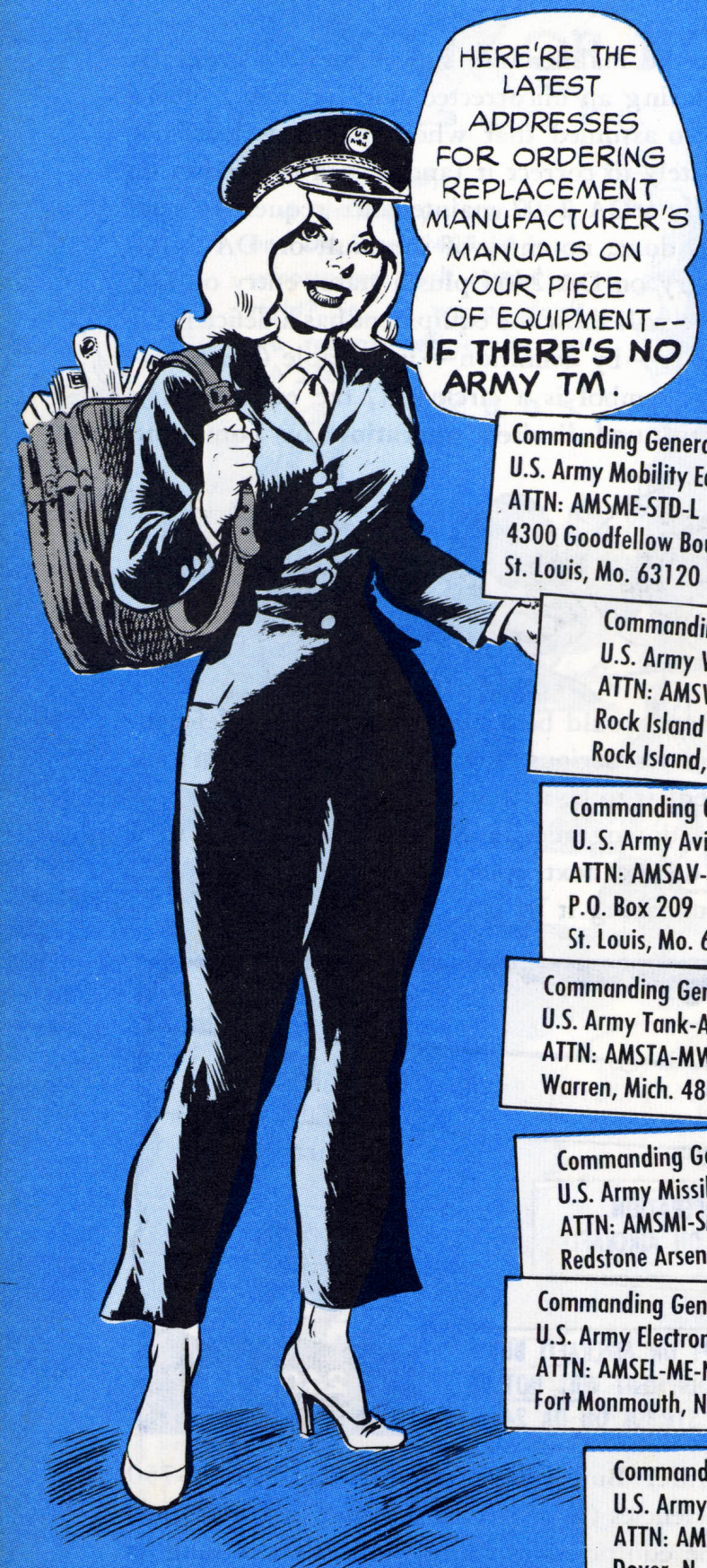


That's the recommended procedure. But, except on aircraft, TM 38-750 doesn't specifically say that any deficiencies (X or circled X) can't be transcribed to DA 2408-14 — even though the equipment remains inoperable as long as there's an uncorrected X deficiency on the form.

Half-Mast

COMMERCIAL MANUALS

Most equipment that requires repair parts and maintenance services is supposed to have a regular DA manual. Check DA Pamphlet 310-4 to be sure there is none before you order the manufacturer's manual.



Typical equipment:

Commanding General
U.S. Army Mobility Equipment Command
ATTN: AMSME-STD-L
4300 Goodfellow Boulevard
St. Louis, Mo. 63120

→ Generators, Compressors, Tractors, Watercraft

Commanding General
U.S. Army Weapons Command
ATTN: AMSWE-SMM-TE
Rock Island Arsenal
Rock Island, Ill. 61201

→ Tools

Commanding General
U. S. Army Aviation Materiel Command
ATTN: AMSAV-MC
P.O. Box 209
St. Louis, Mo. 63166

→ Aircraft Ground-Handling Equipment

Commanding General
U.S. Army Tank-Automotive Command
ATTN: AMSTA-MW
Warren, Mich. 48090

→ Cars, Trucks

Commanding General
U.S. Army Missile Command
ATTN: AMSMI-SM(NMP)
Redstone Arsenal, Alabama 35809

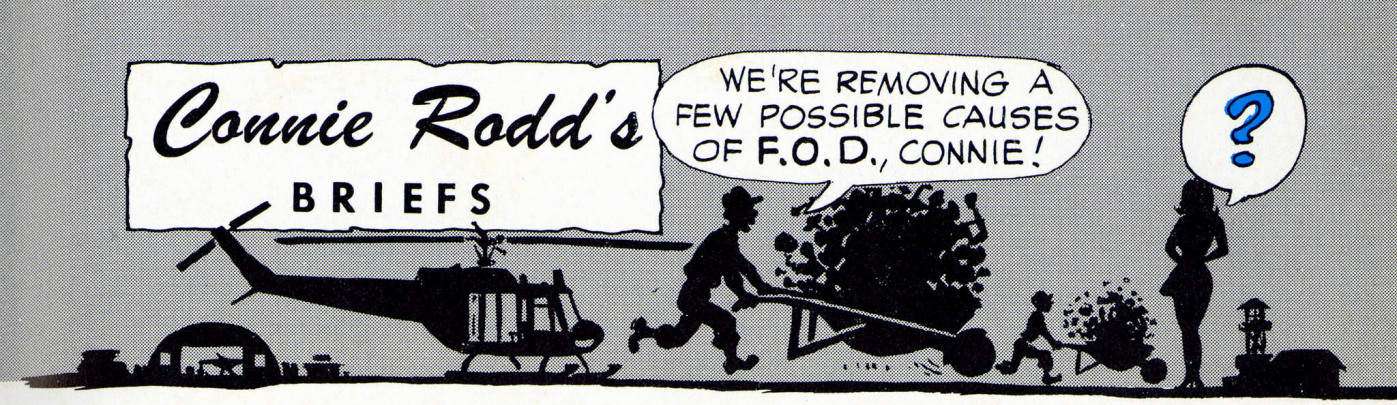
→ Missile—Related Equipment

Commanding General
U.S. Army Electronics Command
ATTN: AMSEL-ME-NMP-AD
Fort Monmouth, N. J. 07703

→ Radios, Teletypes

Commanding General
U.S. Army Munitions Command
ATTN: AMSMU-SM-MC
Dover, N. J. 07801

→ Ammunition and Chemical Equipment



AR 735-35-1

Supply types — quick-like, ask for a copy of AR 735-35-1 (Dec 67), Issue Priority System. It's a handy, pocket-sized guide for figurin' UND's (Urgency of Need Designators). And, the new AR's exempt from pubs distribution scoop covered in DA Cir 310-51 (Nov 67), so you can request your handy guide anytime.

More On Those ML's

Those new C-ML-A's (Catalog-Management Data List-Army), alias "price lists," won't be effective until 1 Aug 68, so you can keep using the ML's you now have until you get the new type. There may be about 20 volumes in the new C-ML-A so be sure to check to see that you have 'em all.

Your No. 2 Supplemental

You can bring your No. 2 Supplemental tool kit, FSN 4940-754-0743, up to date by checking SC 4940-95-CL-A08 (Jul 67).

Blank Forms

If you're not sure which AG Publications Center (Baltimore or St. Louis) furnishes blank forms to your outfit's publication stockroom, check Change 6 (Jun 66) to AR 310-1 (Mar 62). Your location determines which Center serves you.

Shimmy Stopper

Military Standard Engines, 10 to 20 HP, sometimes get messed-up crankshafts from loose flywheel bolts. If you've a 2A042-II or -III, or a 4A084-II or -III, ask support to torque those bolts to between 80 and 83 lb-ft, not 40 to 50 lb-ft like TM 5-2805-204-14 says on page 54. See the word in the latest TM.

"Copper" Mask?

If your M17 field protective mask gives off a copper-colored substance, don't sweat it. The discoloration is not a defect — it comes from a chemical used by one manufacturer in compounding the rubber facepiece. Just clean the mask as often as needed, like it says in para 35, Ch 6, TM 3-4240-202-15.

Would You Stake Your Life right now on the Condition of Your Equipment?

KEEP ENGINES COOL
NEVER INSTALL THEM . . . OR OPERATE THEM WHERE AIR CAN'T GET TO THEM!
NEVER REMOVE THE ENGINE'S SHROUD WHILE IT'S OPERATING!
NEVER LET LUBE LEVEL DROP TOO LOW!
COOL, MAN . . . COOL!